Administration and Management of Water Supply Services (B)

Country Reports FY2022

Japan International Corporation of Welfare Services (JICWELS)

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1. CAMBODIA

Administration and Management of Water Supply Services

Inception Report Presentation

Name: SENG Sonnisa Position : Official Department of Planning and Data Management, General Department of Potable Water Supply, Ministry of Industry, Science, Technology & Innovation (MISTI) Cambodia

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Outline of Water Supply Services

- Prakas, Sub Degree and Water Law(in progress)
- Demarcation of Water Supply Services: Urban Water Supply under Ministry of Industry, Science, Technology and Innovation(MISTI) and Rural Water Supply under Ministry of Rural Development(MRD)
- Main Actor of Urban Water Supply Utilities are under the MISTI
- 2030 vision: 100% of Cambodian People can access to clean water
- My vision: Study, research, and suggest investment planning to find supports from partners to develop the field of potable water supply.

Whole Country:

Area : 181 035 km²

Population : 16 million

Coverage Water Supply: 72%

Pursat Public Water Work

Service Area : 630 km²

Population Served: 47 210(Oct 2022)

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Water Supply Service Levels

INDICATORS	2012	2018	Goals for 2025
Staff/1,000 connections	10,6	4,9	3,2
Production capacity (m ³ /day)	5 760	7 260	13 860
Water quality standards	National Standard	National standard	National Standard
Coverage area	58,18 %	56,92%	100%
Supply duration (hour/day)	24	24	24
Supply pressure	1.5(Bar)	1.5 (Bar)	1.5-2(Bar)
Number of connections	5 016	7 657	21 498
Population Served	25 080	37 380	107 489
NRW	16,97%	8.93%	8%
Collection ratio	90%	91.07%	95%
Staff number	30	38	68

Management of Water Quality

- Challenges/Problems:
 - 1, The water quality don't meet the National Drinking Water Standard
 - 2, The water quality inspection laboratory in Phnom Penh.
- Actions against Those Challenges/Problems:
 - 1, Inspection and Certificate of Operation (CO)
 - 2, Mobile laboratory (in progress)
- National Drinking Water Standard(28 Parameters)
- Water Supply Monitoring System(WSMS)
- Implementation of Water Safety Plans: Mobile laboratory (in progress)

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Reduction of Non-Revenue Water

	Authorized	Revenue water	Billed authorized consumption	2 349 923 m ³ /year (91.62 %)
System	consumption		Unbilled authorized consumption (ex. fire fighting, cleaning)	215 055 m³/year (8.38 %)
input volume	Water losses	Non Revenue Water (NRW)	Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	m ³ /year (%)
		Real losses (Leakage)	m ³ /year (%)	

Reduction of Non-Revenue Water

- Leakage Detection Measures: Night step test
- Countermeasures for NRW:
 - Replacement of old pipes, vanes and water meters
 - Maintenance pipe network
 - Quick respond to water leakage within 1 hour after getting allert
 - Water leakage reseach and crime inspection
 - Disseminate and educate people about clean water supply.

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Accounting System of Water Supply Services

- Water Tariff: From 0m³ to 3m³ =1,300, and up to 4m³ = 1,600,
- **Balance Sheet:** used SUMs system, closing entries monthly and yearly
- Profit and Loss Statement: used SUMs system, closing entries monthly and yearly.



Major Recent Achievement in improvement of water supply services

- New treatment plan 6,600m³ under JICA project
- Total pipes network 185,246 km
- Increase coverage area(Village) to 66.6%(2022)
- Build customer trust and increase connections.





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Recent challenges of Water Supply Services

- Lack of development partner and investor
- Limit number of skill worker in mechanical installation
- Leakage of distribution pipes because of road construction
- > Low pressure in some area (Kondieng district)
- > Muddy water source during rainy season.



Thank you for your attention

2. ECUADOR

Administration and Management of Water Supply Services

Inception Report Presentation

Name: Cesar Intriago Position: Technical Analyst Organization: Regulation and Control Agency of Ecuador (ARCA)

Outline of Water Supply Services

- Legal Basis of Water Supply Services. Republic Constitution (Art. 64, 318), Water Law (Art. 23, 35), COOTAD (Art. 55), ARCA's Regulations (003, 006, 010,011,012)
- Demarcation of Water Supply Services . Water and Environmental Ministry (Politics and Water Management), ARCA (Regulation and control of water supply services).
- Main Actor of Water Supply Utilities. Municipalities (Public Enterprises) and Community Organizations.
- Mission/Vision of Water Supply Utilities. Provide water supply services in continuity and quality.
- Your Mission/Vision in your organization. Dynamize projects and services with quality and opportunity, ensuring the social and economic development of the population / Convert Tena into a dynamic benchmark for change, whose growth characteristics are marked by the active participation of its inhabitants.

Whole Country:				
Area :	256 370 km ²			
Population :	17.89 million (2021)			
Coverage Water Supply:	79.3 %			
Selected Water Supply System/Ci	<u>ty:</u>			
Service Area :	262 km ²			
Population Served:	4 thousand			

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Water Supply Service Levels

INDICATORS	2016	2020	Goals for 2025
Staff/1,000 connections	5	6	4,8
Production capacity (m ³ /day)	18257	21292	22000
Water quality standards	None	100% INEN 1108	100% INEN 1108
Coverage area	47%	100%	100%
Supply duration (hour/day)	24	24	24
Supply pressure	1 bar	1 bar	1 bar
Number of connections	6014	9451	12500
Population Served	27063	40023	50000
NRW	39,7%	53,8%	35,0%
Collection ratio	70%	76,1%	90%
Staff number	30	57	60

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Management of Water Quality

- Current Situation and Major Challenges/Problems. High sediment concentrations during heavy rainfall in the raw water source.
- Current Actions against Those Challenges/Problems. Diversion of flow downstream.
 Water treatment plant has to be closed.
- Water Quality Standards for Drinking Water. INEN 1108 Quality Standard for drinkable water.
- Monitoring System or Plans for Safety of Drinking Water in Your Organization / Regulatory Body / Independent Institution /Others. Daily analysis of water quality (physical chemical and bacteriological).
- Implementation of Water Safety Plans or Similar Efforts. Conservation of water sources.

Reduction of Non-Revenue Water

	Authorized	Revenue water	Billed authorized consumption	3,5 million m ³ /year (%)
System input volume	consumption		Unbilled authorized consumption (ex. fire fighting, cleaning)	(No data)(%)
7,6 million m ³ /year	Water losses	Non Revenue Water (NRW)	Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	(No data)(%)
			Real losses (Leakage)	(No data)(%)

- Leakage Detection Measures
- Countermeasures for NRW

Accounting System of Water Supply Services

Water Tariff in your Organization. Average tariff per unit volume in USD 0,17
 USD/m3.

Consumption range (m3)		Commercial (USD/m3)			Municipal Facilities (USD/m3)
0 - 30	0,07	0,05	0,13	0,04	0,04
30 - 500	0,09	0,12	0,15	0,04	0,04

- Balance Sheet of your Organization. Not available.
- Profit and Loss Statement of your Organization. Costs per year 2'819.581,7
 USD/year. Operating revenue per year 3'747.830* USD/year.
- * Includes budget for investment works.

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Major Recent Achievement in improvement of water supply services

- Extension of two additional modules (filters) in the water treatment plant.
- SCADA system implemented for flow measurement.
- Expansion of the water distribution network (230 additional connections)
- Installation of water meters in the water supply system.

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Recent challenges of Water Supply Services

- Limited water supply in the new water distribution network. Operational and legal problems with the construction company.
- Excessive consumption of water by industries and companies.
- Low water tariff. Low income.
- There is no equipment to control water losses in the network system..

3. PAKISTAN

Administration and Management of Water Supply Services

Inception Report Presentation

Name: Fareena Fatima Position : Section Officer (Tech-II) Organization: Housing Urban Development & Public Health Engineering Department

Inception Report Presentation

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6. Major Recent Achievements in Improvement of Water Supply Services

7. Recent Challenges to Improvement of Water Supply Services

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Outline of Water Supply Services

- Legal Basis of Water Supply Services
 LDA Act 1975 and Independent Rules & Regulations of WASA Lahore.
- Demarcation of Water Supply Services
 (Housing Urban Development & Public Health Engineering Department)
- Main Actor of Water Supply Utilities (Local Government Under Act 2019)
- Mission/Vision of HUD&PHE Department: The vision of the department is to harness the inherent potential of cities in order to make them the engines of economic growth in line with the vision of Government of the Punjab, and provision of low cost housing, water supply and sanitation coverage across the province, particularly focusing on Brackish and Barani areas.

Target Area: Lahore, Pakistan						
Area :	1772 km ²					
Selected Water Supp	Selected Water Supply System/City:					
Service Area : 350 km ²						
Population	: 8,000,00					
Population Served: 7.2 million						
Coverage Water Supply: 90 %						

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Water Supply Service Levels

INDICATORS	2000	2018	Goals for 2025
Staff/1,000 connections	17	10.21	8.7
Production capacity (m ³ /day)	1,977,272	1,977,272	1,977,272
Water quality standards	PEQS	PEQS	PEQS
Coverage area	90%	90%	93%
Supply duration (hour/day)	14	14	14
Supply pressure	0.141 bar	0.141 bar	0.141bar
Number of connections	4,33,000	6,86,912	728,126
Population Served	87%	7,200,000	7,886,400
NRW	-	-	-
Collection ratio	75%	80%	85%
Staff number	7200	7166	6673

Management of Water Quality

- Water Quality Standards for Drinking Water: Punjab Environmental Quality Standards are employed.
- Monitoring System or Plans for Safety of Drinking Water in HUD&PHED:
- a) ISO 7025 certified testing labs in targeted area are operational and reports are issued based on laboratory tests performed.
- b) Maintenance Directorate is established.
- c) SCADA on 6 tube wells and one Disposal station.
- Implementation of Water Safety Plans or Similar Efforts:
- i. Water Conservation Plan is active.
- ii. Water meter installation. (pipeline project)
- iii. Approval of Master Plan (2018-2040).
- iv. Control over water abstraction.
- v. Switching to Surface Water. (pipeline project)
- vi. Gastroenteritis Phase 1 & 2 (Replacement of water pipelines)

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Management of Water Quality Cont'd

Current Situation / Major Challenges & Actions taken against challenges:

i. Ground Water Depletion:

100% dependency on groundwater resulting in rapidly depleting Ground Water Resources.

ii. Poor Water Quality:

Deteriorating water quality due to Arsenic & Bacterial Contamination.

iii. Flooding in Monsoon:

Frequent Flooding during heavy monsoon due to inadequate infrastructure.

iv. Others:

- Serious Capacity issues.
- Financial & Institutional Issues.
- High NRW.

Reduction of Non-Revenue Water

	Authorized	Revenue water	Billed authorized consumption	xx m ³ /year (64 %)
System	consumption	Non	Unbilled authorized consumption (ex. fire fighting, cleaning)	xx m ³ /year (36%)
input volume	Water losses	Revenue Water (NRW = More than 40%)	Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	xx m ³ /year (%)
		Real losses (Leakage)	xx m³/year (%)	

Leakage Detection Measures Not Available

Countermeasures for NRW Not Available

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Accounting System of Water Supply Services

- Water Tariff: Average tariff per unit volume = 0.02 USD/ m³
- Balance Sheet
- Profit and Loss Statement: NIL

Major Recent Achievement in improvement of water supply services

- Water Metering: Metering and measuring facility water use helped to analyze saving opportunities.
- Use of Water efficient fixtures: Dual flushing systems (High flow rate/ Low flow rate) and water sense taps/ faucets have been adopted as water efficient fixtures for using water efficiently.
- Rain Water Harvesting Systems: Rain Water Harvesting Systems have been implemented to collect and store rainwater for drinking or recharging underground aquifers.

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Recent challenges of Water Supply Services

- Poor Planning: Integrated development Plans IDPs / Water Services Development Plans WSDPs are mostly outdated and not implemented properly.
 Water services authorities do not have a maintenance plan for their water infrastructure.
- **Poor Infrastructure:** Cities are facing a serious bottleneck in the infrastructure maintenance. Restoration is necessary for providing potable water services but due to severe financial and capacity limitations, this could not become possible.
- Inadequate Human Resource: One of the reasons is lack of skilled and expertise HR/ Staff and lack of capacity building programs that ultimately enable staff members to perform core operational functions.

4. PARAGUAY

Administration and Management of Water Supply Services

Inception Report Presentation

Name: Claudia Godoy Basso Position : Administrative Officer Organization: ESSAP S.A.

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Outline of Water Supply Services

- Legal Basis of Water Supply Services: The institution in charge of regulating the provision of Service is ERSSAN, with Law 1614, establishes the regulatory framework for services; Although we don't Have Ministry in charge, ERSSAN covers these needs.
- <u>Main Actor of Water Supply Utilities</u>: In Paraguay most of water facilities are public bureau under government (some are local bureau like sanitation board in Ypane City).
- **<u>Mission</u>**: Provide drinking water services and Sanitary Sewerage in a sustainable way, committed to the quality of life of the population
- <u>Vision of water supply Utilities</u>: Lead the provision of Potable Water and Sewerage services Sanitary at the country level, with efficient management, appropriate technology and sustainable, guaranteeing users a service of excellence.
- Values:
 - Respect Responsibility Honesty Teamwork Integrity Professionalism

• Your Mission/Vision in your organization: Raise the level of efficiency in the provision of drinking water and sanitary sewage in the service areas assigned to Essap to achieve leadership in the national territory

Whole Country:				
Area : 402,057km ²				
Population : 1.852.997				
Coverage Water Supply: 97.97%				
Selected Water Supply System/City:				
Service Area : 252.697 km ²				
Population Served: 1.115 (1.115.000) million/ thousand				

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Water Supply Service Levels

INDICATORS	2022		Goals for 2030
Staff/1,000 connections			
Production capacity (m ³ /day)	442.000 m ³ /day		562.400 m ³ /day
Water quality standards	2 NTU (MAX 5NTU)		IQUAL/SOSTEIN
Coverage area			
Supply duration (hour/day)	24/7		24/7
Supply pressure	10 MCA/ 9MCA		10 MCA/ 9MCA
Number of connections	256.000		
Population Served			
NRW	47,92%		
Collection ratio	###		###
Staff number	###	/	###

Management of Water Quality

- Current Situation and Major Challenges/Problems: Essap is currently executing a 100km pipeline change in the metropolitan area, in order to reduce losses in the streets. The last time in 2013, 62km of pipe changes were made, this being the most challenging today. On the other hand, there are certain inconveniences that we must deal with, such as on public roads: traffic, schedule, pavement (asphalt), frontages, weather, among others.
- Current Actions against Those Challenges/Problems: Communications are carried out in different media such as television and social networks, the socialization of information is extensive, we hope to have a significant reach. The most popular and wide-reaching social networks in Paraguay are: Instagram, Twitter and Whatsapp. For better or for worse, Paraguayan citizens are not carrying to news from public institutions, and communication is dissipated, slowing down the reach of information.

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- Water Quality Standards for Drinking Water: The water quality module in the MICS survey is based on the WHO/UNICEF *Joint Monitoring Program* for the Water Supply and Sanitation (JMP).
- The *JMP* is the official mechanism of the United Nations system United Nations responsible for preparing information on the progress of the Sustainable Development Goals (SDGs) related to water supply and sanitation. (targets 6.1 and 6.2)
- WHO guidelines on drinking water quality AND E. coli is recommended as indicator bacteria Selected households in the sample are tested for E. coli. (bacteria indicating the presence of fecal matter).
- The WHO recommends as a guide, that there is no presence of E. coli in a 100 ml sample of water.
- Reference values, standards: <1 per 100 mL of sample. Sampling of drinking water at home: it is through a glass of water What would you give a child to drink? - <u>Sampling of sources</u>: the sample is taken at the place of the source or collect the sample in a sterilized Whirl Pak bag, if this cannot be done take it directly.
- Blank test: high quality water is supplied to the meters to the blank test, the water is poured directly from the bottle. This is to check the correct sterilization of the elements used in the measurement.

Reduction of Non-Revenue Water

	Authorized	Revenue water	Billed authorized consumption	221.000 m ³ /year (50 %)
System	consumption	otion Unbilled authorized consumption (ex. fire fighting, cleaning)		221.000 m ³ /year (50%)
input volume			Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	97.240 m ³ /year (22 %)
			Real losses (Leakage)	123.760 m ³ /year (28%)

Leakage Detection Measures

Countermeasures for NRW

Accounting System of Water Supply Services

Water Tariff in your Organization Local (EX-

CHANGE)

TARIFARIO DEL SERVICIO DE AGUA POTABLE Y ALCANTARILLADO SANITARIO

		Cargo Variable (Gs/m³)		
Categoría	Cargo Básico	0 - 15 m ³	16 - 40 m ³	más de 40 m ³
Subsidiada	4.707	1.236	1.958	2.154
Residencial No Subsidiada	8.236	1.767	2.287	2.667
No Residencial	23.533	2.796	2.865	3.324

* La tarifa por la prestación del Servicio de Alcantarillado Sanitario se facturará del importe correspondiente al 100% de la facturación por consumo de agua potable, debido a la complementariedad del servicio.

****** Las tarifas no incluyen el IVA, ni cualquier otro impuesto o contribución que graven los servicios, quedando a cargo del prestador agregar la tasa correspondiente.

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Parazuay de la zente



ESSAP S.A DIRECCION DE CONTABILIDAD GENERAL

ESTADO DE RESULTADOS CONSOLIDADOS

GOBIERNO NACIONAL

	E	STADO DE RESULTADOS C	ONSOLIDADOS	
		(EXPRESADO EN GUARAN	IIES)	
		AÑO 2021		
		CRIBAL M7		
			D	ICIEMBRE
	INGRESOS			
	Suministro de Agua A	Potable		331.268.949.922
	Servicio de Agua Pot	able		22.481.806.836
	Tasa de Conserva. d	e Cloaca	:	137.097.772.317
	Serv. de Alcant. Sani	tario		522.095.580
	Totales Ingresos	Vetos	49	1.370.624.655
	_			
	EGRESOS			
\sim	Carto de Administra	ación		-98.675.993.619
	Gastos de Mant. Rec	les Dist.Aqua		-60.028.957.676
LOSS	Gastos Adm. Interior			-14.485.501.262
	Gastos de Comercia			-12.194.474.470
	Gastos de Comercia			-17.341.461.883
ENT	Gtos. Alcant. Sanit. (-9.748.477.720
	Gastos Serv. Alcant.			-637.769.410
	Gtos.de Prod.de Agu			-99.224.272.162
	Gastos de Prod.de A			-75.640.472.884
	Gastos de Comercia			-2.152.523.930
	Depreciaciones			28.329.167.025
	Totales		-36	1.800.737.991
	Totales			1.000.737.371
	N			
	Resultado Operativ	76		9.569.886.664
		SOS EXTRAORDINARIOS		
	Ingresos Varios			56.020.603.320
	Gastos Financieros			-51.036.302.220
	Otros Gastos			-75.719.162.418
	Depreciacion			-28.329.167.025
	Resultado del Ejere	ddo	3	0.505.858.321
RNO	Directora contabil Paraguay de la gente	LIC. HECTORENRIQUE AVALAACOS GERENTE FINANCIERO	GOBIERNO NACIONAL	Parazuay de la zente
NAL	de la gente	ESSAP S.A DIRECCION DE CONTABILIDAD GENERAL	NACIONAL	de la gente
NSOLIDADO	·	BALANCE G	ENERAL CONSOLIDA RESADO EN GUARANIES) AÑO 2021 CRIBAL M6	DO
				DICIEMBRE
		PASIVO		
	DICIEMBRE	Pasivo Corriente		
		Deudas Comerciales Deudas Fiscales		29.207.00 22.091.31
		Retenciones Varias a Pagar		13.299.39
	100.986.150.925	Ret. IVA Decreto 2698 Ret. RENTA Decreto 2698		502.43 496.95
	46.133.269	ley 1614/2000 ERSSAN		58.40
	33.000.000	Ley 2051/03 IVA Débito		12.10 (927.71
	77.553.787	Dirección General Grandes Contribuyente	rs.	2.102.20
	2.619.059.542 48.312.698.460	IVA Débito 5% Impuesto a la Renta a Pagar		5.983.64
	48.312.698.460 49.744.042.750	Erssan a pagar		5.983.64 562.75
	128.968.117	LEY 6486/20 Y LEY 5777/16		
	24.695.000	LEY 6672/21 MINIST.JUSTIC LEY 6672/21 M.DEFENSA PUB		56
	144.375.404.384	Deudas Sociales		8.037.89
	188.919.068.575	Remuneraciones a Pagar Instituto de Previsión Social		426.80
	82.884.179.524	Instituto de Prevision Social Provisiones p/Aguinaldo		3.249.68
	108.054.889.051 (81.430.385.209)	Provision beneficio Jubilacion		4.361.40
	(81.430.385.209) 36.886.721.018	Cuentas a pagar fideicomiso Prestamos a Pagar - BIRF		14.473.65 15.914.15
	0	Prestamos a Pagar - INTERESES BIRF		1.564.61
	0	Deudas Externa - Capital Deudas Externa - Intereses		10.987.84 88.76

PROFIT & LOSS STATEMENT

essap	GOBIERNO NACIONAL	Paraguny de la gente	ESSAP S.A DIRECCION DE CONTABILIDAD GENERAL	GOBIERNO NACIONAL	Parazuny de la gente
SSAP S.A		V			
IRECCION DE CONTABILIDAD GENERAL				ENERAL CONSOLIDADO (RESADO EN GUARANIES)	
BALANCE	GENERAL CONSOLIDADO		(EP	AÑO 2021	
(E	XPRESADO EN GUARANIES)			CRIBAL M6	
	AÑO 2021				DICIEMBRE
	CRIBAL M6		PASIVO		
		DICIEMBRE	Pasivo Corriente		
		DIGIENDIG	Deudas Comerciales Deudas Fiscales		29.207.003.0
<u>CTIVO</u>			Retenciones Varias a Pagar		22.091.310.24 13.299.396.8
ctivo Corriente			Ret. IVA Decreto 2698		502.431.4
Disponibilidades		100.986.150.925	Ret. RENTA Decreto 2698 ley 1614/2000 ERSSAN		496.950.80 58.401.2
Fondo Fijo		46.133.269	Ley 2051/03		58.401.2
Fondo de Caja		33.000.000	IVA Débito		(927.711.6
Recaudación a Depositar		77.553.787	Dirección General Grandes Contribuyente	es	2.102.200.4
Banco Cuenta Corriente		2.619.059.542	IVA Débito 5% Impuesto a la Renta a Pagar		
Banco Caja de Ahorro Garantia Fideicomiso		48.312.698.460 49.744.042.750	Erssan a pagar		5.983.644.5 562.756.1
Banco Cta. Afectación Esp.		49.744.042.750	LEY 6486/20 Y LEY 5777/16		
Banco Cta. Cte Financ-Externa		24.695.000	LEY 6672/21 MINIST.JUSTIC		568.3
			LEY 6672/21 M.DEFENSA PUB		, 568.3
Créditos		144.375.404.384	Deudas Sociales		8.037.892.3
Crèditos por Servicio		188.919.068.575	Remuneraciones a Pagar Instituto de Previsión Social		426.800.4 3.249.687.1
Estado		82.884.179.524	Provisiones p/Aguinaldo		3.245.007.1
Particulares		108.054.889.051	Provision beneficio Jubilacion		4.361.404.8
Prevision Creditos por Servicios		(81.430.385.209)	Cuentas a pagar fideicomiso		14.473.656.7
Otros Creditos		36.886.721.018	Prestamos a Pagar - BIRF Prestamos a Pagar - INTERESES BIRF		15.914.154.8 1.564.611.7
Creditos a Compensar con Canon		0	Deudas Externa - Capital		10.987.848.2
Inversiones a Corto Plazo		0	Deudas Externa - Intereses		88.764.1
Inventarios		48.540.033.511	Otras Deudas		23.764.870.9
Cargos Diferidos		11.222.027.130	Previsiones		3.066.257.1
Total Activo Corriente		305.123.615.950	Total Pasivo Corriente		129.196.369.41
ative and Coming to			Pasivo No Corriente		
Activo no Corriente			Proveedores Retenciones Varias a Pagar		112.036.926.74
Inversiones		37.200.000	Deudas Fiscales N/C		2.519.367.49 5.408.126.54
Acciones en Otras Empresas		37.200.000	Prevision Causas Judiciales		21.681.973.97
Pyto BIRF 7710 Comp.2 PMS		0	Deudas Externa		272.667.175.99
Propiedad, Planta y Equipos		1.128.157.094.518	Acreedores Varios Cuentas a pagar fideicomiso		
Deuda M.H. p/ Prestamo		1.128.157.094.518	Cuentas a pagar fideicomiso Total Pasivo No Corriente		147.506.395.2 561.819.965.95
		-			
Prevision Otros Creditos		-5.755.242.506	Total Pasivo		691.016.335.37
Otros Activos No Corriente		4.859.759.092			
Créditos por Servicios		103.184.366.340	PATRIMONIO NETO		
Prevision Creditos por Servicios		-95.151.699.931	Capital		497.450.910.0
Total Activo no Corriente		1.135.331.477.513	Adelantos Irrevocables (Canon) Reservas v Revaluo		116.689.241.9
			Resultado Acumulados		104.792.747.7
Total Activo		1.440.455.093.463	Resultado del Ejercicio		30.505.858.3
TOTAL ACTIV		214401405010551405			
			Total Patrimonio Neto		749.438.758.09
			Total Pasivo y P. Neto		1.440.455.093.46
C.P. CINTHIA R. AYALA M. LIC. I DIRECTORA CONTABILIDAD GENERAL	HECTORENRIQUE AYALA ACOSTA ING. NATAL GERENTE FINANCIERO	ICIOESTEBAN CHASE ACOSTA	C.P. CINTHIA R. AYALA M. LIC. H DIRECT ORA CONTABILIDAD GENERAL	ECTOR ENRIQUE AYALA ACOSTA ING. NATA GERENTE FINANCIPRO	PRESIZENT

5. SRI LANKA (1)

Administration and Management of Water Supply Services

Inception Report Presentation

Name:LAKM Liyanaarachchi Position : Senior Engineer (Civil) Organization: National Water Supply & Drainage Board

2

1

Outline of Water Supply Services

- The principle agency responsible for development, operation and maintenance of drinking water supplies is the National Water Supply and Drainage Board (NWSDB), which functions under the Ministry of Water Supply.
- Community based organizations & local authorities also involved in managing rural water supply schemes,
- NWSDB is governed by Water Board act (1974), National Drinking Water Policies & other Government policies.

NWSDB Vision

To be the most prestigious utility organization in Sri Lanka through technological and service excellence

My Vision at NWSDB

To be a effective team member for achieving NWSDB vision by providing the service through my knowledge and skills

NWSDB Mission

Serve the nation by providing sustainable water & sanitation solutions ensuring total user satisfaction

My Mission at NWSDB

Serve the nation by implementing NWSDB plans to achieve its short term & long term goals

Outline of Water Supply Servicescontd.

Whole Country:						
Area : 65,610	1 km ²					
Population	: 22,306,533					
Coverage Water	Coverage Water Supply: 55.7%					
Selected Water Supply System/City: Gampaha District						
Service Area :	1387 km ²					
Population	Served: 556/ thousand					

4

3

Water Supply Service Levels

INDICATORS	2018	2021	Goals for 2025
Staff/1,000 connections	4.31	336	
Production capacity (m ³ /day)	1,937,889	2,233,733	4,040,293
Water quality standards	SLS 614-2013		
Coverage area	50.5%	55.7%	100%
Supply duration (hour/day)	18-24	18-24	22-24
Supply pressure	1 bar	1 bar	1 bar
Number of connections	2.3 million	2.9 million	3.8million
Population Served	10.93 million	12.43 million	23.23 million
NRW	24.93%	25.80%	15.00%
Collection ratio	106%	100%	100%
Staff number	10000	9744	

Management of Water Quality

Water Quality Standards

SLS 614-2013

Water Quality

- Routine operational testing at treatment plants
- Regular testing for physical, chemical & toxic parameters of water samples by regional laboratories
- Water quality surveillance by Ministry of health & Municipal councils & Industries
- Implementation of water safety plans
- Residual chlorine map updates

Water Safety Plan

Total WSS under NWSDB-342 nos Water safety plan implemented-264 nos Internal formal audit completed-15 nos External formal audit completed-15 nos

6

5

Management of Water Quality-Contd.

Major Challenges/Problems

- · Catchment pollution due to domestic & industrial discharge
- Chemical concentration (Iron, Manganese etc.) in drought periods
- Turbidity issues during floods
- Sea water intrusion

Current Actions against Those Challenges/Problems

- Implementation of water safety plan to protect water from catchment to consumer's tap
- Construction of salinity barriers
- · Establishment of iron removal plants

Reduction of Non-Revenue Water

	Authorized	Revenue water	Billed authorized consumption	606,397,856 m³/year (74.3 %)
System	consumption		xx m³/year (%)	
input volume	t Non Apparent loss Revenue (Unauthorize Water consumption Water (NRW) (i.e. Illegal use), Cu		Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	xx m³/year (%)
			Real losses (Leakage)	xx m³/year (%)

Leakage Detection Measures

Night leak survey

Using Eco sticks to identify service leaks

Using Leak detection instrument to identify main leaks

Countermeasures for NRW

- Leak detection & repair
- Metering of unmetered connections/Metering of free water outlets
- Rectification of detected illegal activities/connections
- Meter accuracy test
- Replacement of leaking pipelines
- Defective meter replacements
- Meter reading audits
- Establishment of DMA's



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Accounting System of Water Supply Services • Water Tariff

Tariff For Domestic - Samurdhi Recipients

Commercial Non Vat Institutions, NWSDB Premises, Mixed Developments And Bowser Supply

No. of units	Usage Charge Rs./Unit	Monthly Service Charge Rs.
00-05	5.00	100.00
06-10	10.00	100.00
11-15	15.00	100.00
16-20	40.00	100.00
21-25	58.00	100.00
26-30	88.00	200.00
31-40	105.00	400.00
41-50	120.00	650.00
51-75	130.00	1,000.00
Over 75	140.00	1,600.00

Rs.	No. of units	Usage Charge Rs./Unit	Monthly Service Charge Rs.
	00-25	116.00	300.00
	26-50	116.00	575.00
	51-75	116.00	1,150.00
	76-100	116.00	1,150.00
	101-200	116.00	1,840.00
	201-500	116.00	2,875.00
[501-1,000	116.00	4,600.00

Tariff For SOE, Commercial Premises, Tourist Hotels/Guest Houses, Other Commercial And Private Institutions, Commercial Non Vat Institutions, NWSDB Premises, Mixed Developments And Bowser Supply

No. of units	Usage Charge Rs./Unit	Monthly Service Charge Rs. 300.00	
00-25	116.00		
26-50	116.00	575.00	
51-75	116.00	1,150.00	
76-100	116.00	1,150.00	
101-200	116.00	1,840.00	
201-500	116.00	2,875.00	
501-1,000	116.00	4,600.00	

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Accounting System of Water Supply Services

National Water Supply And Drai	inage	Board		
STATEMENT OF COMPREHE	ENSIV	/E INCOME		
Year ended 31 December 2021				
		Budget	Actual	Restated
		2021	2021	2020
		Rs.	Rs.	Rs.
Revenue (Net of VAT)	7	33,126,589,400	28,935,444,532	27,761,775,794
Cost of Sales	8	(20,462,063,409)	(19,162,945,539)	(16,754,645,376)
Gross Profit		12,664,525,991	9,772,498,993	11,007,130,418
Other Operating Income and Gains	9	1,852,428,600	1,796,124,476	1,482,081,558
Administrative Expenses	10	(14,698,127,591)	(13,657,858,647)	(12,035,048,008)
Other Operating Expenses	11	(700,000,000)	(997,912,577)	(839,273,459)
Operating Profit / (Loss)		(881,173,000)	(3,087,147,754)	(385,109,491)
Finance Income	12	500,000,000	842,533,384	1,571,188,666
Finance Cost	13	(258,841,000)	(752,071,879)	(543,298,051)
Profit / (Loss) Before Tax		(640,014,000)	(2,996,686,249)	642,781,124
Income Tax (Economic Service Charges)	14	<u> </u>	(138,860,749)	(133,867,482)
Profit / (Loss) for the Year		(640,014,000)	(3,135,546,998)	508,913,642

Balance Sheet of NWSDB

National Water Supply And Drainage Board			
STATEMENT OF FINANCIAL POSITION			
Year ended 31 December 2021		Actual	Restated
		2021	2020
Assets		Rs	<u>Rs.</u>
Non- Current Assets	Notes		
Property ,Plant & Equipment	15	263,568,177,495	251,992,187,547
Intangible Assets	16	20,429,157	14,122,453
Capital Work in Progress	17	443,737,128,772	373,462,655,570
Financial assets	18	1,889,780	1,853,507
Total Non Current Assets		707,327,625,205	625,470,819,078
Current Assets			
Non Operating Assets		149,748,448	149,681,812
Inventories Trade & Other Receivables	19 20	9,830,918,912	8,382,106,647
Deposits & Advances	20	10,709,918,219	11,136,884,898
Investments	21	28,866,235,652 24,349,404,858	28,708,013,898 23,598,991,188
Cash & Cash Equivalents	23	4,233,330,332	1,834,937,637
Total Current Assets	23	78,139,556,420	73,810,616,080
Total Assets		785,467,181,625	699,281,435,158
Equity and Liabilities			
Equity			
Assets taken over from Government Dept. Government Equity	24	185,480,387	185,480,387
Staff Welfare & Other Funds	25	100,263,323,220	88,531,428,611
Retained Earnings	26	33,115,808	20,608,827
Government Grant	27	(12,387,333,301) 117,548,897,076	(9,016,059,633) 109,812,274,767
Capital Grants	28	292,056,546,906	267,289,006,096
Total Equity	28	497,700,030,097	456,822,739,054
Non-Current Liabilities		471,700,050,057	430,022,739,034
Loan Payable			
	29	227,420,934,401	198,175,771,364
Other Deferred Liabilities	30	4,414,833,084	4,019,409,604
Total Non Current Liabilities		231,835,767,485	202,195,180,969
Current Liabilities			
Non Operating Liabilities		71,927,749	71,927,749
Trade & Other Payables	31	40,111,024,288	33,724,877,505
Loan Capital Payable	29	12,578,838,828	2,920,569,236
Loan Interest Payable		3,169,593,179	3,546,140,644
Total Current Liabilities		55,931,384,044	40,263,515,135
Total Equity and Liabilities		785,467,181,625	699,281,435,158

Major Recent Achievement in improvement of water supply services

- · Implementation of water safety plans
- Enhancement of water distribution network



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Recent challenges of Water Supply Services

- Fund limitations
- · Limitations in distribution network
- · Limitations in production capacity
- Less water resources
- Catchment pollution
- Salinity Intrusion
- · Ensuring uninterrupted supply of drinking water during drought periods
- Boreholes & Tube Wells depletion

6. SRI LANKA (2)

Administration and Management of Water Supply Services

Inception Report Presentation

Name	:	Sutharsan, M.E		
Position	:	Chief Engineer		
Organization: National Water Supply & Drainage Board, Sri Lanka				

2

1

Outline of Water Supply Services

1. Legal Basis of Water Supply Services

The principle agency responsible for development, operation and maintenance of drinking water supplies is the National Water Supply and Drainage Board (NWSDB), which functions under the ministry in charge of drinking water.

The NWSDB, established under an act of parliament in 1975

2. Demarcation of Water Supply Services The ministry in charge is "Ministry of Water Supply"

3. Main Actor of Water Supply Utilities

- Provincial Councils Since drinking water is a devolved subject under the constitution the policy aims at building capacity of local and provincial agencies for self sustaining drinking water supplies.
- Local Authorities Be responsible for planning, design and implementation of small and medium water supply schemes including operation and maintenance according to sound public utility practice.
- ■The Beneficiaries The responsibilities and commitment of users will be promoted to ensure uninterrupted services in a sustainable manner. Improve awareness of the water users on the limitation of scarce water resources and protection of sources through proper environmental management. 27

4. Vision

"To be the most prestigious utility organization in Sri Lanka through technological and service excellence"

5. Mission

"Serve the nation by providing sustainable water & sanitation solutions ensuring total user satisfaction"

Whole Country:				
Area	: 65,610 km ²			
Population	: 21.6 million			
Coverage Water Supply	: 65.4 %			
Selected Water Supply System/City:				
<u>Mannar WSS</u>				
Service Area	: 235 km²			
Population Served	: 58,000			



Fig 1. Sri Lanka Map

4

Water Supply Service Levels

INDICATORS	2018	2021	Goals for 2025
Staff/1,000 connections	4.31	3.36	3.0-3.1
Production capacity (m ³ /day)	1,937,889	2,233,733	4,040,293
Water quality standards		SLS 614-2013	
Coverage area	50.5%	55.7%	100%
Supply duration (hour/day)	18-24	18-24	22-24
Supply pressure	1 bar	1 bar	1 bar
Number of connections	2.3 million	2.9 million	3.8million
Population Served	10.93 million	12.43 million	23.23 million
NRW	24.93%	25.80%	15.00%
Collection ratio	106%	100%	100%
Staff number	10000	9744	18,000
Management of Water Quality

1. Current Situation and Major Challenges/Problems

There are well equipped 42 nos laboratory in Sri Lanka and some are with ISO-

17025 standards

The encroachments / human activities towards the water sources

Shareholders of catchment area of water source are not in one "umbrella"

- 2. Current Actions against Those Challenges/Problems
- USP, WRM Committee under Government Agent
- 2. Water Quality Standards for Drinking Water SLS 614:2013
- 3. Monitoring System or Plans for Safety of Drinking Water in Your Organization / Regulatory Body / Independent Institution /Others
- Internally audited by the province, head office and externally audited by IESL and WHO

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Reduction of Non-Revenue Water

System input volume	Authorized consumption	Revenue water	Billed authorized consumption	606,398 Billion m³/year (%)
			Unbilled authorized consumption (ex. fire fighting, cleaning)	No reliable data
	Water losses	Non Revenue Water (NRW)	Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	No reliable data
			Real losses (Leakage)	No reliable data

Accounting System of Water Supply Services

• Water Tariff in your Organization: Gazette Extraordinary No. 1776/13 dated

25th August, 2022, which in effect from the 01st day of September 2022

Profit and Loss Statement of NWSDB

STATEMENT OF COMPREHE	NSIV	/E INCOME		
Year ended 31 December 2021				
		Budget	Actual	Restated
		2021	2021	2020
		Rs.	Rs.	Rs.
Revenue (Net of VAT)	7	33,126,589,400	28,935,444,532	27,761,775,794
Cost of Sales	8	(20,462,063,409)	(19,162,945,539)	(16,754,645,376)
Gross Profit		12,664,525,991	9,772,498,993	11,007,130,418
Other Operating Income and Gains	9	1,852,428,600	1,796,124,476	1,482,081,558
Administrative Expenses	10	(14,698,127,591)	(13,657,858,647)	(12,035,048,008)
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Balance Sheet of NWSDB

National Water Supply And Drainage Board			
STATEMENT OF FINANCIAL POSITION			
Year ended 31 December 2021		Actual	Restated
1 miles		2021	2020
Assets		Rs	<u>Rs.</u>
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Property ,Plant & Equipment	15	263,568,177,495	251,992,187,547
Intangible Assets	16	20,429,157	14,122,453
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Financial assets	18	1,889,780	1,853,507
Total Non Current Assets		707,327,625,205	625,470,819,078
Current Assets			
Non Operating Assets Inventories		149,748,448	149,681,812
Trade & Other Receivables	19	9,830,918,912	8,382,106,647
Deposits & Advances	20 21	10,709,918,219	11,136,884,898
Investments	21	28,866,235,652	28,708,013,898
		24,349,404,858	23,598,991,188
Cash & Cash Equivalents	23	4,233,330,332	1,834,937,637
Total Current Assets		78,139,556,420	73,810,616,080
Total Assets		785,467,181,625	699,281,435,158
Equity and Liabilities			
Equity			
Assets taken over from Government Dept.	24	185,480,387	185,480,387
Government Equity	25	100,263,323,220	88,531,428,611
Staff Welfare & Other Funds	26	33,115,808	20,608,827
Retained Earnings		(12,387,333,301)	(9,016,059,633)
Government Grant	27	117,548,897,076	109,812,274,767
Capital Grants	28	292,056,546,906	267,289,006,096
Total Equity		497,700,030,097	456,822,739,054
Non-Current Liabilities			
Loan Payable	29	227,420,934,401	198,175,771,364
Other Deferred Liabilities	30	4,414,833,084	4,019,409,604
Total Non Current Liabilities		231,835,767,485	202,195,180,969
Current Liabilities			
Non Operating Liabilities		71,927,749	71,927,749
Trade & Other Payables	31	40,111,024,288	33,724,877,505
Loan Capital Payable	29	12,578,838,828	2,920,569,236
Loan Interest Payable		3,169,593,179	3,546,140,644
Total Current Liabilities		55,931,384,044	40,263,515,135
Total Equity and Liabilities		785,467,181,625	699,281,435,158

8

Major Recent Achievement in improvement of water supply services

- Formulating the national "Water Supply Master Plan" to supply potable drinking 24x7 and to increase water supply coverage to 100% by 2025. (in 2020)
- Project formulation for WTP capacity enhancement and distribution network expansion.(CEDE project) (in 2020)
- Introduced "call center" as a focal point to address the consumers complaints to reduce the response time. (in 2022)
- Central system for water assets management (in 2020).

Recent challenges of Water Supply Services

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- Lack of investment on new WSS, WS service expansion, WTP capacity enhancement, O&M activities (Ex: lack of consumer meters), NRW reduction staff training and R&D activities due to present economic crisis
- Insufficient technical capacity of local authority is to look after Small and medium WSS. It creates additional stress on NWSDB
- 3. Most of the water sources are shared by Irrigation Department and challenging to increase the water extraction
- 4. The are WSS depends on the GW, in which Partial Treatment is done not the full treatment, hence **WQ standards might not be fulfilled**
- 5. Due to the over extraction form GW sources, problems started in WQ worsening
- 6. Sri Lanka is vulnerable for climate change and **insufficient water availability** in dry season and, sudden **raw WQ variations** in wet season.

7. TIMOR-LESTE

Administration and Management of Water Supply Services

Inception Report Presentation

Name: Teresinha dos Santos Position : Laboratory Coordinator Organization : Bee Timor-Leste, Public Company

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1

General Information of Timor-Leste Background

Population

Nationality: Democratic Republic of Timor-Leste

Population: 1,167,242 (2015 census) and estimation in 2022 could be 1.4 million.

Religion: Catholic 96 %. Languages: Portuguese, Tetum (official); English, Bahasa Indonesia (working languages).

Economy

The total population economically active an agriculture in 2009 was an estimated 344,000 inhabitants, amounting to 80% of the economically active population,

Industries: Printing, soap manufacturing, handicrafts, woven cloth.

Agriculture Products : Coffee, rice, corn, cassava, sweet potatoes, soybeans, cabbage, mangoes, bananas, vanilla, orange, pineapple and papaya.

Climate

- Dry Season
- Rainy Season

Outline of Water Supply Services

Legal Basis of Water Supply Services

- Based on Decree-Law No.4/2004 - Water distribution for public consumption

Demarcation of Water Supply Services

- Ministry of Public works - created ANAS, I.P., and BTL, E.P.

* National Authority for Water and Sanitation, or (ANAS-I.P) – Decree-Law No. 38/2020 – ensure the monitoring, inspection, and licensing of the activity of entities managing water supply and sanitation systems, in accordance with the law

* **Bee Timor-Leste, Public company** – DL No. 41/2020 – BTL, E.P (Water Timor Leste – Public Enterprise) was transform from DGAS in 2020 (approved year).

- **Ministry of Health** – Controlling/Laboratory testing and Providing license for Quality of Drinking water

Main Actor of Water Supply Utilities

BTL Client in Timor-Leste-Dili (including all Municipalities special in urban and rural areas).

Outline of Water Supply Services

Mission/Vision of Water Supply Utilities

Mission: The need to establish a network of water supply and sanitation systems for populations throughout the territory is an objective of enormous scope and must be made possible in accordance with the special technical requirements that are raised for this purpose.

Vision: Indeed, this matter is included in the Strategic Development Plan 2011-2030, at the heart of which the Government establishes universal and equitable access to a drinking water supply system as one of its priorities until 2030.

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Outline of Water Supply Services

Your Mission/Vision in your organization

Mission are to contribute to the government of Timor-Leste by providing an amount of water and supporting GoTL to increase the economic development of Timor-Leste through collecting as much as revenue water.

Whole Country:	_			
Area : 107.4	132 km			
Population : 1,	379,825 peo	ple		
Coverage Wate	er Supply: 10	%		
Selected Water	Supply Syst	<u>tem/City:</u>		
Service Area :	14,870 km ²	2		
Population	Served:	138.684	people	

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Water Supply Service Levels

INDICATORS	2022	Goals for 2025
Staff/1,000 connections	16.76	
Production capacity (m ³ /day)	65,000	
Water quality standards	DL No.31/2020	
Coverage area	10%	
Supply duration (hour/day)	16	
Supply pressure	2 bar	
Number of connections	19,812	
Population Served	138,684	
NRW	98%	
Collection ratio	0.3%	
Staff number	332	

Management of Water Quality

Current Situation and Major Challenges/Problems

Shortage of support materials especially used in the laboratory for water control/monitoring/water testing material, insufficient of water treatment chemicals for underground and surface water, insufficient water laboratory facilities (such as fume hood, biosafety chemical, and physical test equipment), lack of knowledge on analyzing the water quality data, monitoring controlling the water treatment system and water quality testing, chemical hazardous and chemical safety, water treatment agitator failure.

Current Actions against Those Challenges/Problems

Preparing RFQ/tender for purchasing those materials, self-study for analyzing, monitoring/controlling water treatment, and water quality testing.

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Management of Water Quality

Water Quality Standards for Drinking Water

Decree-Law no. 31/2020 – Water Drinking for Human Consumption

Parameter	Unit	East Timor Guideline	Testing method
Physical test	1	I	
pH value	-	6.5-8.5	pH Meter
E.Conductivity	(µs/cm)	2500	Conductivity meter
TDS	(mg/L)	1000	Conductivity meter
Salinity	(% 0)	NS	Conductivity meter
Color	(mg/L)	20	Comparator
Turbidity	NTU	5 (NTU)	Turbidity meter
Teste & Odour	-	NS	-
Chemical Test			-
Ammonia (NH3-N)	mg/L	0.5	Spectrophotometer
Nitrate (NO ₃ -N)	mg/L	11	Spectrophotometer
Nitrite (NO ₂ -N)	mg/L	0.15	Spectrophotometer
Iron (Fe)	mg/L	0.3	Spectrophotometer
Manganese (Mn)	mg/L	0.05	Spectrophotometer
Fluoride	mg/L	1.5	Spectrophotometer
Langelier Index (min&max)	mg/L	-0.5 a +0.5	Calculation
Free residual chlorine (Cl ₂)	mg/L	0.2-0.6	Comparator/Colorimeter
Arsenic (As)	mg/L	0.01	Comparator
Calcium (Ca)	mg/L	100	Titration
T. Hardness (CaCO ₃)	mg/L	110-500	Titration
Sulphate (SQ 2-)	mg/L	250	Spectrophotometer
Aluminum (Al)	mg/L	0.2	Spectrophotometer
Magnesium (Mg)	mg/L	50	Spectrophotometer
Chloride (Cl)	mg/L	250	Spectrophotometer
Bacteriological test			·
Total Coliform	CFU/100mL	0	Membrane filtration
E.Coli	CFU/100mL	0	Membrane filtration

Management of Water Quality

Monitoring System or Plans for the Safety of Drinking Water in Your Organization / Regulatory Body / Independent Institution /Others

Based on the "Water Quality Control Program" cited on DL no.31/2020 which monitors or controls water Quality every day (daily)/monthly for all BTL water system in Dili.

Implementation of Water Safety Plans or Similar Efforts

"Water Quality Control Program-2022" Daily treatment, Daily and monthly Laboratory testing from Raw water to Distribution line (Underground and surface water)





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Reduction of Non-Revenue Water

	A	Revenue water	Billed authorized consumption	17,124.01 m ³ /year (2.0%)
System	Authorized consumption		Unbilled authorized consumption (ex. fire fighting, cleaning)	68,496.04 m ³ (8%)
input volume	Water losses	Non Revenue Water (NRW)	Apparent losses (Unauthorized consumption (i.e. Illegal use), Customer metering inaccuracies)	5,008,772.89 m ³ (65%)
			Real losses (Leakage)	1,926,451.11 m ³ (25%)

- Leakage Detection Measures: Visualization (walking a long side the pipeline), identifying, allocating materials and repairing
- Countermeasures for NRW : Increasing water pressure and installing as much as water meter

Accounting System of Water Supply Services

- Water Tariff in your Organization
 - Water Tarif, Diploma Ministry No.1/2004
 - * 1-14 m³ x US\$0.20/m³ (domestic customer)
 - * More than 14 m³ x US\$0.60/m³ (non-domestic customer)
- Profit and Loss Statement of your Organization



Revenue of BTL (Including all water Supply service)

Year	Amount	% Target
Target 2022	\$ 250,000.00	189% above
2022 end of Sept	\$ 472,647.71	target
Total 2021-2022	\$729,109.05	

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Major Recent Achievement in improvement of water supply services

• Identifying the issues, increasing water pressure, water tariff socialization, installing water meters, monitoring/controlling, and strictly implementing the laws/regulations, Improving the water treatment controlling and monitoring

Recent challenges of Water Supply Services

• Lots of illegal connections, low pressure of water flow, Lack of human resources for leakage control, shortage of support materials, incomplete drawing installation of the pipeline system, and unstrict law implementation.

出典: 2022 年度 JICA 課題別研修「水道管理行政及び水道事業経営(B)」カントリーレポート

Japan International Corporation of Welfare Services (JICWELS) was established with the sanction of the Minister for Health, Labour and Welfare in July 1983 and implements international technical cooperation programmes with purpose of contributing to the promotion of health and social welfare activities in the friendly nations.

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