



**VIENYIANE CAPITAL WATER SUPPLY STATE  
ENTERPRISE**



# ***Expectation of Water Works Association in Lao PDR***

***International Water Forum: MDGs to SDGs -  
Sustainable water environment and Stable water  
supply***

***Presented by:***

***Khampheuy VONGSAKHAMPHOU***

***General Manager Vientiane Capital WSSE***

# **Contents**

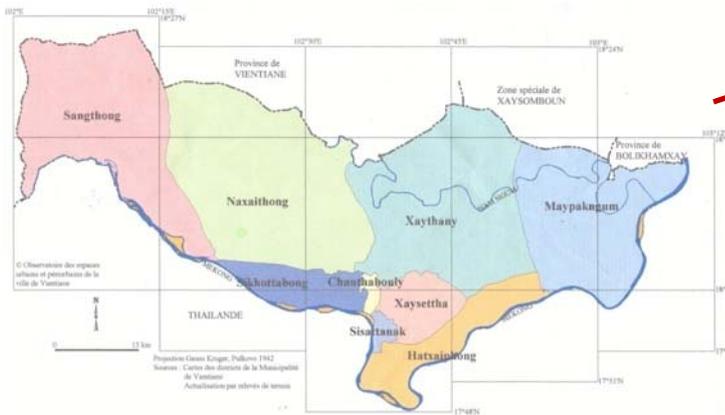
- *General Information of Water Supply in Vientiane Capital*
- *Challenges of Vientiane Capital WSSE*
- *Expectation of Water Works Association in Lao PDR in comparison with JWWA*

---

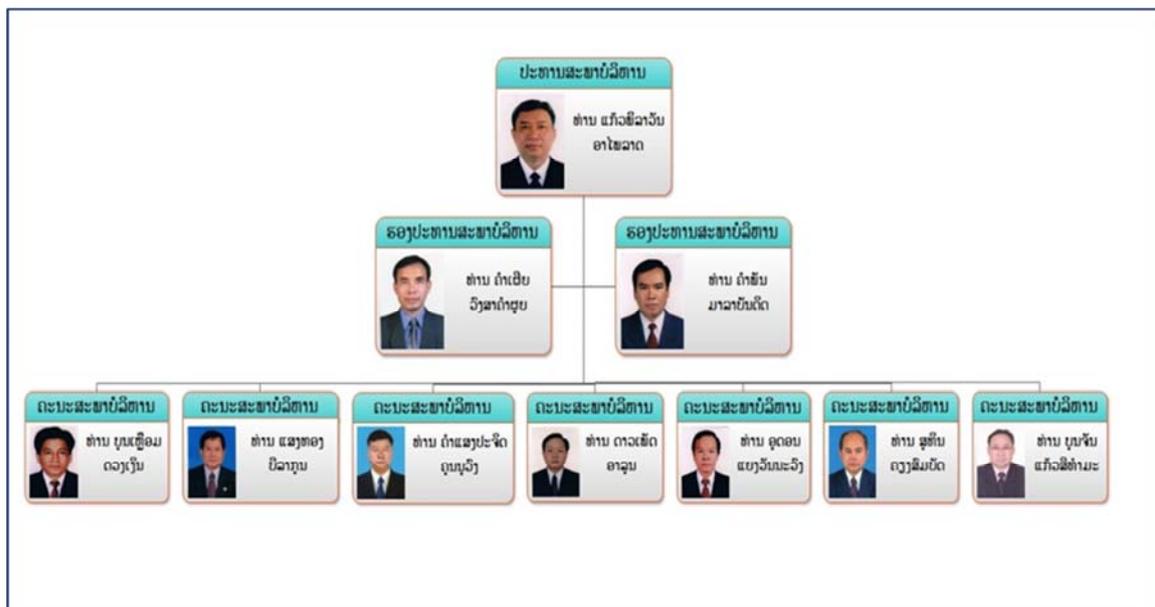
## ***General information of Water Supply in Vientiane Capital***

## *General Information*

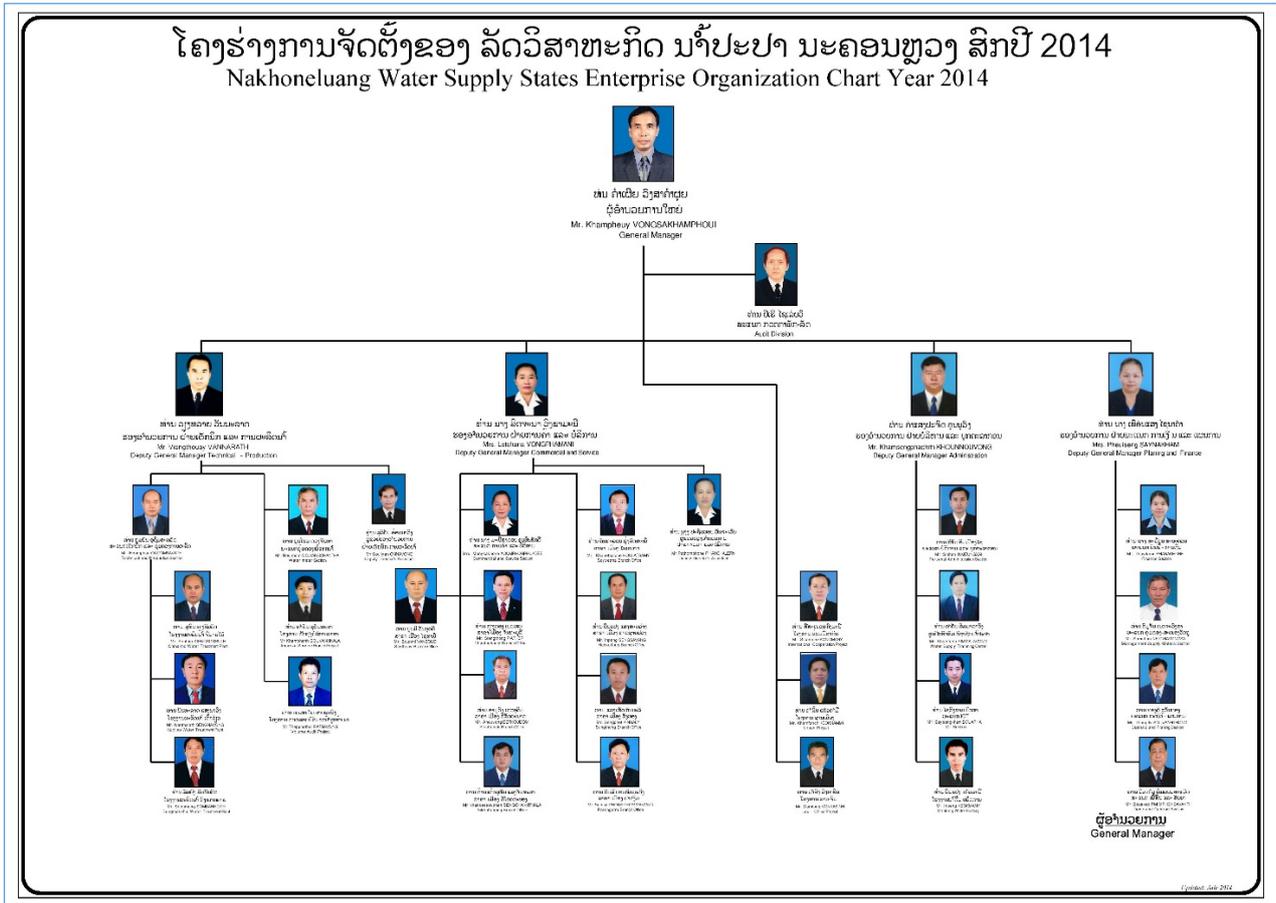
- Vientiane capital is the Capital of LAO PDR, is situated in central part of the country with a total area of 3,920 square kilometer is covering about 1.7% of the country area.
- Vientiane Capital composes of 9 districts and 483 villages with a 850,000 inhabitants with density of 217 people per square kilometer ( year 2014)
- Water supply served around 80 % in service area



## Board Organization Chart.



ໂຄງຮ່າງການຈັດຕັ້ງຂອງ ລັດວິສາຫະກິດ ນໍ້າປະປາ ນະຄອນຫຼວງ ລິກປີ 2014  
 Nakhonluang Water Supply States Enterprise Organization Chart Year 2014



## Personnel

1 General Manager, 4 Deputy General, a number of staff has totally 553 persons, Permanence staff 478 persons, temporariness staff 75 persons

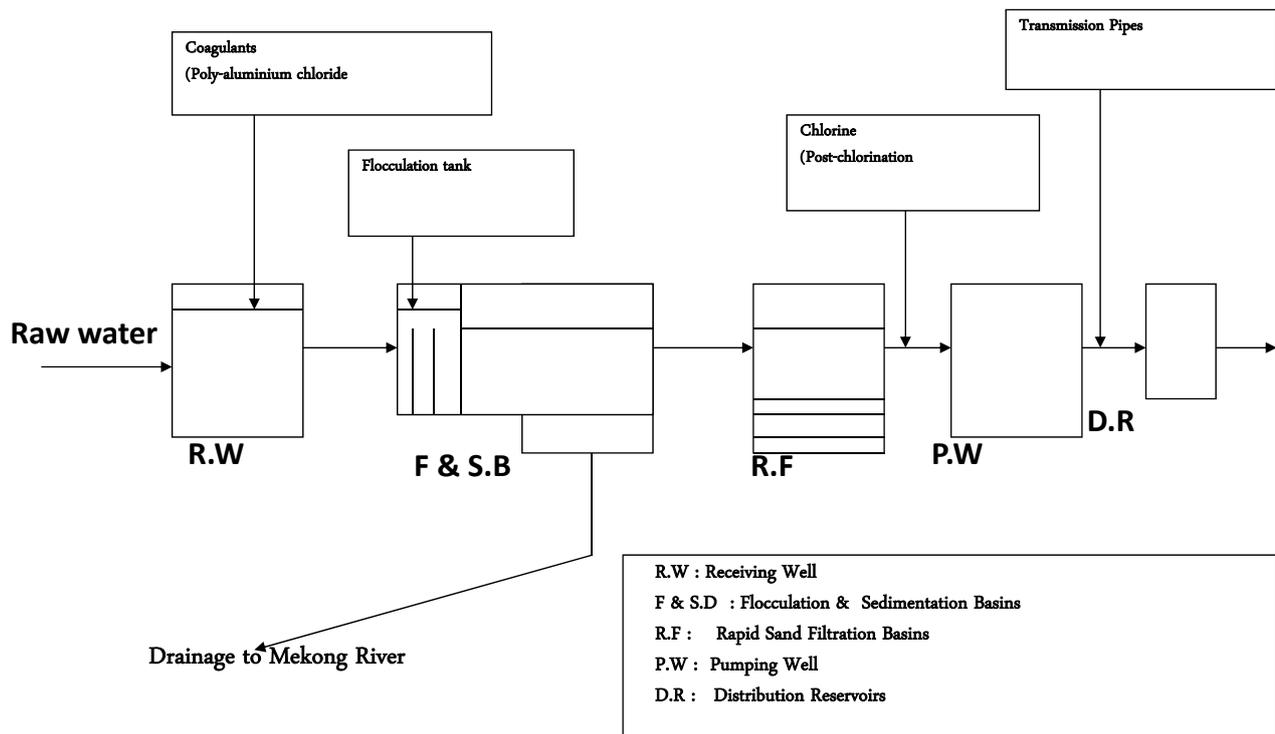
# Water resources

- **Mekong** river are abundant through out the year to serve the **Kaolieo and Chinaimo water treatment plants**, Rainy season, turbidity was going up to 1500-2000 NTU. (August 2015 over 5000 NTU) for dry season, turbidity was going down to 15-20 NTU.
- **Nam ngum** River is one of the largest tributaries of the Mekong River, to serve the **Dongmakay and Dongbang** water treatment plants, Rainy season, turbidity was going around 100-300 NTU and Dry season was going down to 10 -15 NTU.

***WATER PRODUCTION 180 000  
m<sup>3</sup>/day***

1. Chinaimo WTP 80 000 m<sup>3</sup>/day
2. Kaoleo WTP 60 000 m<sup>3</sup>/day
3. Dongmakkhay WTP 20 000 m<sup>3</sup>/day
4. Dong Bang WTP 20 000 m<sup>3</sup>/day

# Conventional Water Treatment System



Chinaimo WTP 80.000 m<sup>3</sup>/day



# Water Quality

## (a) Raw water

Turbidity : 88 PPM  
 Color: 5  
 pH : 8



## (b) Tap water (treated water)

Turbidity: 0.8 PPM  
 Color : 0  
 pH : 7.2  
 Iron: 0 mg/l  
 Manganese: 0 mg/l  
 Hardness: 100 mg/l  
 Nitrate Nitrogen: 12 mg/l



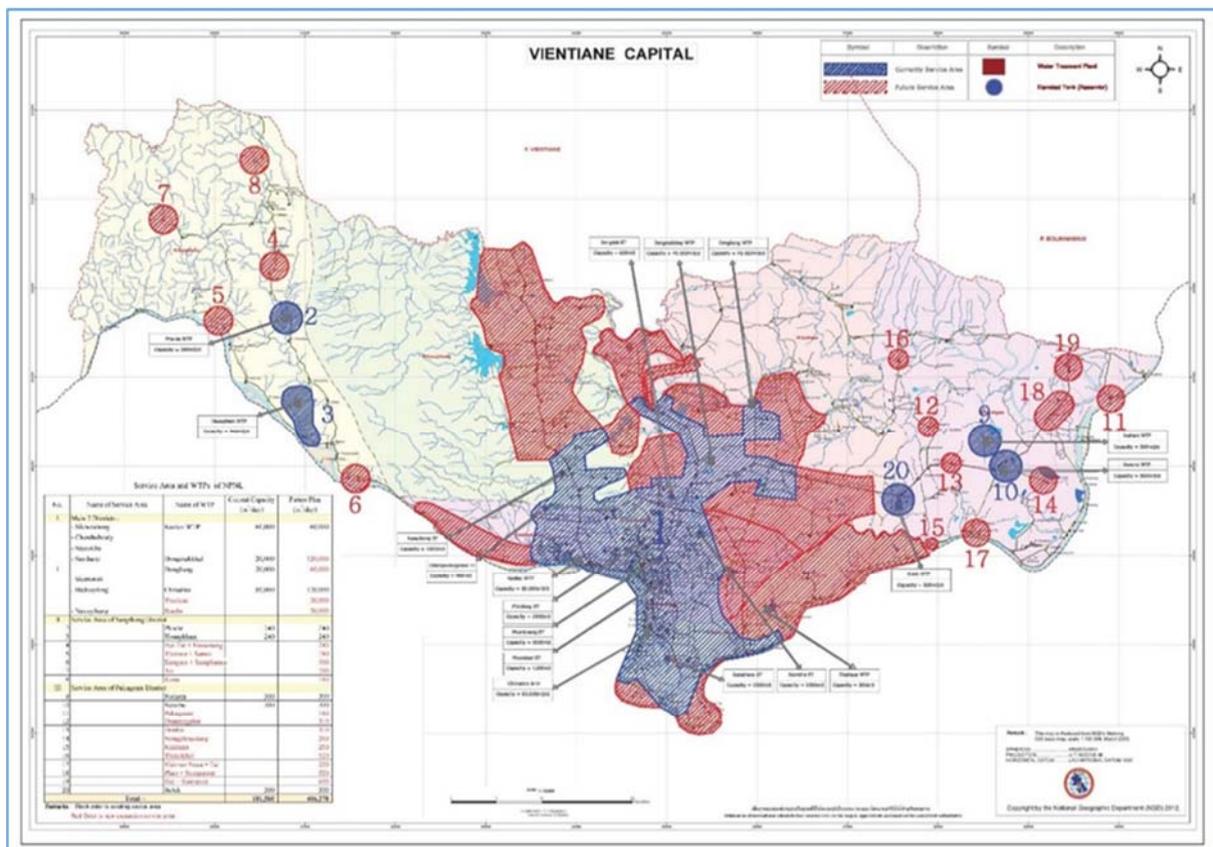
### *Priorities of Parameters*

No	Parameters to be analyzed	Units	Allowable Concentration
1	pH		6.5-8.5
2	Turbidity	NTU	< 10
3	Taste and Odour		Acceptable
4	Conductivity	uS/cm	1000
5	Iron	mg/l	< 1
6	Manganese	mg/l	< 0.5
7	Arsenic	mg/l	< 0.05
8	Fluoride	mg/l	< 1.5
9	Nitrate	mg/l	50
10	Thermotolerant Coliform	No/100ml	0
11	Total Hardness	mg/l	< 300
12	Nitrite	mg/l	3
13	Residual Chlorine in chlorinated water supply	mg/l	< 0.2



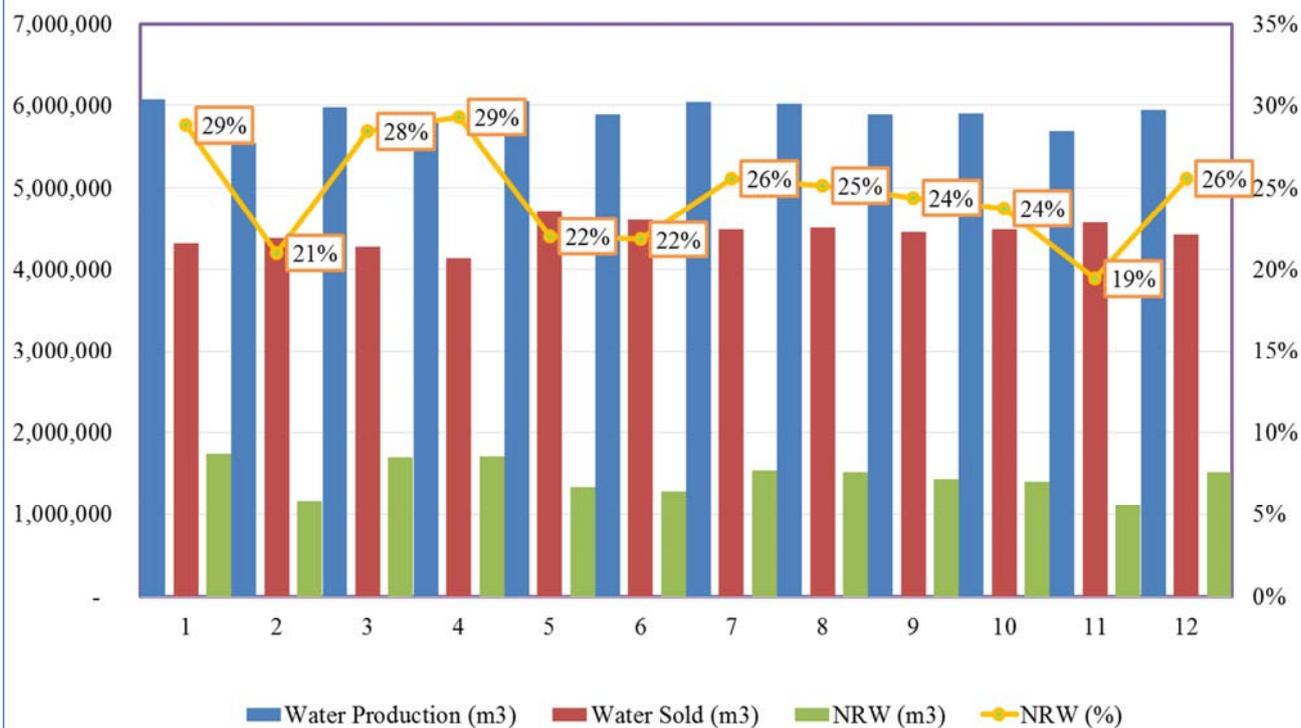
# WATER NETWORK and SERVICE AREA

## Service Area in Vientiane Capital





Water Production, Water Sold and NRW in 2014



# Commercial and Financial Management

# WATER TARIFF

## 1. Domestic Used

- 1 to 10 m<sup>3</sup> = 1300 kip/m<sup>3</sup> ( 0,16 USD)      September 2014
- 11 to 30 m<sup>3</sup> = 1800 kip/m<sup>3</sup> (0,23 USD)
- 31 to 50 m<sup>3</sup> = 2300 kip/m<sup>3</sup> (0,28 USD)
- > 50 m<sup>3</sup> = 2800 kip/m<sup>3</sup> ( 0,35 USD)

## 2. Government and International Organization

- One flat price = 2300 kip/m<sup>3</sup> ( 0,28 USD)

## 3. Businesses, Commercials, Industries, Hotels and Restaurants

- One flat price = 2800 kip/m<sup>3</sup> (0,35 USD)
- Remark: 2015 (3%), 2016 (3%), 2017 (4%) and 2018 (5%) increase from each year

## Number of Water Meter in each Category

No.	Category	Unit	Year		Compare %	Remark
			2013	2014		
1	2	3	4	5	6=5/4	7
1	Category 1	No.	91,095	99,883	110%	
2	Category 2	No.	1,684	1,053	63%	
3	Category 3	No.	3,509	3,288	94%	
<b>Total</b>		<b>No.</b>	<b>97,507</b>	<b>104,224</b>	<b>107%</b>	

## ***Financial Income-Expenditure and Profit-Loss***

- Income of the running business in 2014 was able to made income about 115 billion compared to the running business in the past year 2013 the revenue just 111.4 billion to the increasing rate compared the last year is 4%.
- Expenditures in the running business in 2014 was about 113.3 billion compared to 2013 was 116.1 billion the expenditures in 2014 can perform better than 2 % of last year.
- Profit - loss was that of 2014 in millions of more than approximately 2 % make doing business with profits of about 1.2 billion because the 2014 state enterprises water supply capital adjusted price rate consuming water piped new make more income description of income - expenditure is shown in the table below:

## **Present and Future Project**

# Expansion Water Production

- Dongmakkhay 100 000 m<sup>3</sup>/day (2015)
- BOT Hatsayphong 20 000 m<sup>3</sup>/day (2016)
- BOT Sendine 20 000 m<sup>3</sup>/day (2017)
- Expansion Dongbang 20 000 m<sup>3</sup>/day ( 2019)
- Expansion Chinaimo 40 000 m<sup>3</sup>/day (2021)

## Expansion of Transmission and Distribution Pipeline

- Loan from NORINCO China around 70 millions USD for:
- Expansion of Distribution pipeline from Sendine BOT Project to Naxaithong District around 60 km
- Expansion of Distribution pipeline for Dongmakkhay WTP to Surrounding Area of Saithany and Saysettha District around 80 km
- And Change GRP 500 mm to 800 mm DIP Dongbang Project around 8 km

# Challenges in Vientiane Capital WSSE

- Coverage 95% the service area in 2020 (now only 80%)
- The Capacity demand will be increased up to 400 000 m<sup>3</sup>/day in the 2020 ( now only 180 000 m<sup>3</sup>/day)
- The old pipelines will be changed more than 60 km
- The staffs Lack of experience for advanced Technical management, Electrical of pump Production,
- Lack of fund to expansion pipe line and replacement old pipe and water meter.
- Storage management ( have a lot categories of pipe in the past )

## Expectation of Water Works Association in Lao PDR in comparison with JWVA

### Activities of JWVA

1. Research on Water Supply Business Management
2. Research on Technology in Water Supply
3. Publication
4. Training
5. International Cooperation
6. Inspection
7. Authorization
8. Insurance

### Prioritized activities of WWA in Lao PDR from VC WSSE's view

- Training system by LWVA
- International cooperation
- Inspection of spec & standard
- Support some fund

