Union of Myanmar
Ministry of Agriculture and Irrigation
Irrigation Department

Water and Waste Water Management in Yangon, Myanmar

Mu Mu Than
Staff Officer, Irrigation Department
Myanmar

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Socio-economical and natural condition of Yangon

Yangon	Former capital city
Area	10,170 km²
Population	5.56 million 2000-2001 6.32 million 2009-2010 (11 % of the total population
Annual average precipitation	2550 mm

Programme for access to save drinking water (MMDG)

1990			2000		
Urban	Rural	Total	Urban	Rural	Total
38%	30%	32%	89%	66%	72%

Water Supply

- Daily about 511030 m^3/d are supposedly supplied to around 60 percent of the population

Wastewater Treatment

- The plant treats 12,300 m^3/d of sewage from 6 townships in the downtown area which is for population of about 325,000.

Situation of quantity and quality of the water sources

Name	Volume of available water(m^3)	Volume of abstracted water (m^3)	Water Quality
Surface water Gyobyu Reservoir		102,206 m^3/d	within the highest desirable level
Phyugyi Reservoir and Hlawga Reservoir		219,553 m^3/d	within the highest desirable level
Ngamoeyeik Reservoir		170,343 m^3/d	within the highest desirable level
Surface water Lower Ayeyarwady River Basin	8,5800 m^3/yr		
Ground water Alluvial, Irrawaddian Peguan	153,249 m^3/yr		

Ground Water Quality

- Most common tests conducted usually are on color, turbidity, pH, hardness, iron and chloride

Iron Concentration

- Evaluation on the chemical quality on tube wells in 17 townships Eastern Yangon indicates that about 34% of the wells tested have iron content in excess of 1.0 mg/l

Chloride

- The presence of chloride concentration of more than 2000 mg/l may be attributed to the sea water intrusion since permeable formation outcrops are found along the bank of the Yangon River.

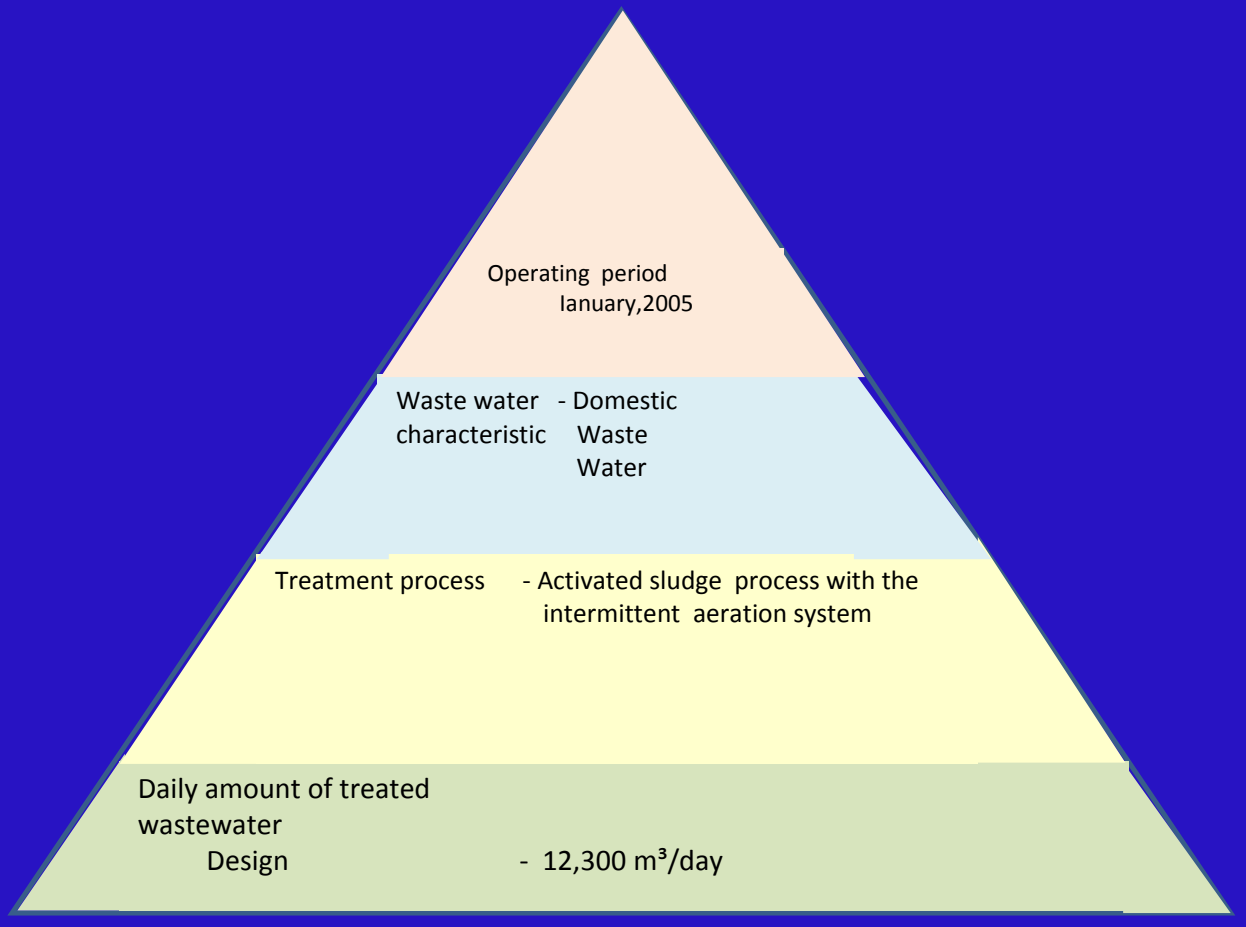
Water Quality Standard

	Highest Describe Level	Maximum Permissible Level
Appearance		
Odor		
Colour (Platinum Cobalt Scale)	5 Unit	50 Unit
Turbidity (Silica Scale Unit)	5 NTU	25 NTU
pH value	7.0 to 8.5	6.5 to 9.2
Total Solid p.pm(mg/l)	500 mg/l	1500 mg/l
Total Hardness(as $CaCO_3$)	100 mg/l	500 mg/l
Total Alkalinity(as $CaCO_3$)		
Calcium as Ca	75 mg/l	200 mg/l
Magnesium as Mg	30 mg/l	150 mg/l
Chloride as C_1	200 mg/l	600 mg/l
Sulphate as SO_4	200 mg/l	400mg/l
Total Iron as Fe	0.3 mg/l	1.0 mg/l
Lead	0.05 mg/l	0.05 mg/l
Others		

Effluent Quality Standard

Pollutant or parameter	Limit
pH	9-Jun
BOD	50
COD	250
Oil and grease	10
TSS	50
Metals	
Heavy metals, total	10
Arsenic	0.1
Cadmium	0.1
Chromium	
Hexavalent	0.1
Total	0.5
Copper	0.5
Iron	3.5
Lead	0.1
Mercury	0.01
Nickel	0.5
Selenium	0.1
Silver	0.5
Zinc	2
Cyanide	
Free	0.1
Total	1
Ammonia	10
Fluoride	20
Chlorine, total residual	0.2
Phenols	0.5
Phosphorus	2
Sulfide	1
Coliform bacteria	<400 MPN/100ml
Temperature increase	<3 ° C[a]

Yangon City Development Committee Waste Water Treatment Plant



- In sub-urban areas of Yangon City individual septic tanks are constructed for homes in accordance with YCDC standards.

- Digested sludge accumulated in the tank is desludged by vacuum tankers of the YCDC or request with service charges made on the amount of volume desludged.

Water Quality Protection

- - To control the direct discharge of wastewater from factories into rivers and streams

  (NCEA proposed effluent standards for proper disposal)

- To ban the use of some toxic pesticides and encourage the utilization of conventional bio- fertilizers as a substitute for chemical fertilizers

  (MAS, Ministry of Agriculture and Irrigation)

- Arsenic and other parameters have been tested in collaboration with the Water Resources Utilization Department (WRUD), Department of Development Affairs (DDA) and United Nations Children's Fund(UNICEF). The Environmental and Sanitation Division under the Ministry of Health is implementing a programme on water supply systems with health institutions and also carrying out a Water Quality Surveillance and Monitoring System Pilot Project in Yangon.

Water Quality Testing

- Reservoirs - Irrigation Department
- Ground water - YCDC
- Rivers - Department of Meteorology and Hydrology

Development of Water Supply and Sanitation Facilities

(i) Incorporate sewage concerns when formulating human settlement plans;

(ii) Build and maintain sewage treatment facilities and other appropriate disposal systems in accordance with national policies and capabilities;

(iii) Locate coastal outfalls so as to maintain an acceptable level of environmental quality and to avoid exposing communities and marine resources to pathogens;

(iv) Promote environmentally sound combined treatment of domestic and compatible industrial effluents;

(v) Promote primary treatment of municipal sewage discharged into rivers, estuaries and the sea;

(vi) Establish and improve regulatory and monitoring programmes to control effluent discharge, using minimum sewage effluent guidelines and water quality criteria.

Conclusion

There are many water related sub-sectors in Myanmar such as irrigation and drainage, water for environment and ecosystems, drinking water and water utilization for industries and sanitation. These should be integrated to exchange views and promote understanding of the quality and quantity of water use and the value of water in the social sector and exchange of views.

Nevertheless, the Environmental Impact Assessment is still weak in water resources management. Due to the ongoing rapid industrialization in cities, these are so many factories around urbanized areas, and there is still a need to disseminate the knowledge about the proper disposal of wastewater to control the problems of the direct discharge of wastewater from factories into rivers or streams

continuous

Other weaknesses in water environment management are a lack of appropriate monitoring facilities, proper and systematic keeping of records, regular monitoring and surveillance data for water quality control and basics standards of water quality for drinking water.

Although there are many laws, acts, legislations and regulations related to water sector, most laws and acts for water sectors still need to be modified. Therefore, these laws and regulations should be reviewed to enact unified water resources laws to promote a more effective legal framework for coordination and management of water resources.


THANK YOU
FOR YOUR KIND ATTENTION !