

BRUNEI DARUSSALAM'S LONG TERM DEVELOPMENT PLAN FOR WATER & WASTEWATER



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MINISTRY'S POLICY

MINISTRY OF DEVELOPMENT through

➤ WATER SERVICES DEPARTMENT

➤ DRAINAGE AND SEWERAGE DEPARTMENT, PWD

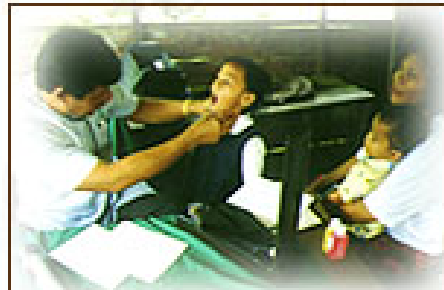
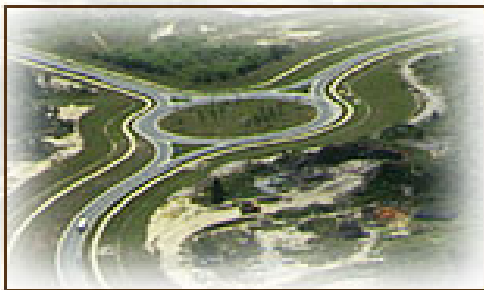
'To provide clean, safe, affordable , continuous water supply, adequate and efficient drainage and sewerage facilities to the people of Negara Brunei Darussalam'



MINISTRY OF DEVELOPMENT

ROLE :

- ▶ Provide the necessary foundation for the continuous growth of the nation
- ▶ Planner & Provider of infrastructure and services such as Road, potable water, sanitation, drainage, housing and Government Buildings.



CURRENT STATUS

- 100% of overall population of about 385,000 served with safe potable piped system
- 2% of population in rural community are served with slow sand filtration protopak system
- WHO International Water Quality Guidelines
- Public water supply relies solely on surface water resources under 4 main water supply systems
- River Catchment covers 75% (3,425 sg.km) of country's land



CURRENT STATUS

- 77% is for domestic and commercial use, 18% for oil and gas industry and 5% for irrigation
- Consumption per capita is about 450 l/c/d and % NRW is 33%
- 44% of population served by public sewer
- 20% of water village using sewerage vacuum system
- 86% of sewage treated before disposal



STRATEGIES & INITIATIVES

1. INTEGRATED WATER RESOURCE MANAGEMENT

- Enforcement of Land Acts, Town and Country Planning Acts, Water Acts, Environment Acts to safeguard water catchment from pollution
- Supply and Demand Management to emphasize on timely constructed dams and treatment plants to cater to growing water demand .
- Water Resource Studies (Identifying potential dams beyond 2035)
- Reducing NRW (currently 33% through pipe replacement & leak detection program)



STRATEGIES & INITIATIVES

2. ADAPTATION TO CLIMATIC CHANGE

- 3 new reservoirs are to be developed ie Kargu Dam (10MCM-ongoing), Ulu Tutong (100MCM-to be constructed) and Ulu Belait Dam (100MCM-planning) will secure water supply till 2035 and beyond. This will add total storage capacity to 265 MCM and total of 6 dams for the country.
- 2 nos of Barrage of main river source constructed to prevent saline intrusion and regulate river flow during long drought
- Water Pricing (Rate among the lowest in the region). Under review taking into account the element of Affordability to consumer.
- Water Conservation (Consumption of 450 litre per capita per day)



STRATEGIES & INITIATIVES

3. INFRASTRUCTURE DEVELOPMENT

- New infrastructures for water, sewerage and drainage system are being built which includes dams, treatment plants, reservoirs ,pipe mains and storm drains to cater for growing demand. 25% invested under National fund.

This includes 3 newly completed treatment plants adding production capacity of 138 mld to the existing 430mld water production.

- Upgrading of 4 nos sewerage treatment plants capacity ranging 30% to 100% increase
- Hydrometric data network with info-communication technology



STRATEGIES & INITIATIVES

4. CAPACITY BUILDING

- Strengthen Human Resource Development through training programs and seminars .
- Networking with other International Co-operation ie PUB, Singapore
- Strategic awareness programs among decision makers & stakeholders



STRATEGIES & INITIATIVES

5. RISK MANAGEMENT & ROBUSTNESS

- Auditing Critical Operational Assets for backup systems against major failure such as pumps, power supply and control panels.
- Enhancement of Water Quality Monitoring with new water lab and 11 additional new water quality parameters
- Dam safety and monitoring system through engagement of International dam safety experts.



STRATEGIES & INITIATIVES

6. TECHNOLOGY

- Sewerage vacuum system for new water village housing
- Integration of membrane technology for tertiary treatment to existing water treatment plants
- GIS , Maximo (Asset management) and telemetry system (monitoring of reservoir levels)



WATER SUPPLY LONG TERM DEVELOPMENT GOALS

- Ensure continuous, safe, reliable, adequate water supply
- Reviewing Legislative Acts to adapt to current changes & enhance enforcement
- Enhance robustness (risk mgt)
- Increase Revenue
- Enhance Enabling Environment & capacity building
- Adopting best practice technologies and management tools
- Reduce % of NRW and enhance water conservation
- Adopting and Innovate best practice in IWRM



CONCLUSION

Further gaps that require attention are :

- **Increase investments for water and wastewater development**
- **Establish Institutional reform to adopt IWRM of water resources and wastewater management effectively**
- **Private Sector Participation**
- **Strategic assistance of technical expertise**
- **Adopt new legislative Acts to enhance catchment protection and pollution control**

TODAY MATTERS !

