



Water Issues & Culture in Samoa



Samoa Water Authority



About Samoa



- Formerly “Western Samoa”
- Population – 175,000 (2001 census)
- Volcanic – 2 main islands
- Max height – 1860 m (amsl)
- Total land – 2,935 sq. km
- Location – Southwest Pacific
- Rainfall – 2100 – 7000mm

Samoa Water Authority (SWA)

Established 1994

- Goal – financially independent

Water Supply – 85% popn (18,000 customers)

- Operates – TP (3), bores (44), Raw water intakes (22)
- Produce – 160,000 m³/d
- O & M Expenditure - \$7 M/yr

Wastewater – yet to fully exercise





Water Catchments

Catchments deterioration

- Low river flows (dry season)
- Frequent flash-flood (wet season)
- Changed river flow patterns over time
- high soil erosion
- turbid & colored water (koko Samoa)

GW – drop freshwater table lens

- Less GW recharge

Water Catchments





Water Treatment

Slow sand filtration

- Overload – 2 X designed capacity
- Filter level critical (not effective)
- Costly maintenance (sand)

Chlorination

- Inconsistent dosage
- Safety

Metering

Water meter acceptance ???
(resistance)

- ❑ Free, God's gift (universal)
- ❑ Community groups consultations
- ❑ Consultative meeting with "matais"
- ❑ Disconnect supply (last resort)

Water meter tampering

- ❑ Use of magnet, move internals
- ❑ Bypassing & removal
- ❑ New connection (new name)





Water Demands

- ❑ Increase competition for its various uses (EPC, SWA, etc)
- ❑ Urbanization – Apia (ration - conflict)
- ❑ Expansion of tourism & other industries
- ❑ Increase running & operation costs – tariff review



Tariff Structure

- Flat-rate (untreated): \$144/yr
- Progressive (log-scale) : \$0.12 - \$1.40/m³/d
- reduce consumption, not cost recovery
- Expensive for low income
- No free water allocation

New approved tariff structure (effect July, '03)

- O&M simple cost recovery
- Free portion – 0.5m³/d (WHO subsistence std)
- 2 bands (50¢ - 2.2m³/d, 67¢ >2.2m³/d)
- 5 year + review



UFW

- Leaky & deteriorating old mains
- Lack of accurate maps (as-built drawings)
- Poor design construction (supervision)
- Water theft (illegal connection, hydrants)
- Poor data collection (lack system meters)

Address in Asset Mngt Strategy & Action Plan



Sys. Operations & Maintenance

- Lack technical/qualified staff
- Financial constraints -tools, fittings (standard)
- Inadequate planning (preventative maint.)
- Poor mapping (leakage by contractor)
- Road permits process (public notices)
- System alteration (traditional practice)

ISP – training, equipment, policy/procedures
(discipline/incentives)



Service Coverage

- Financial constraints
- Remote & disadv. areas – water scarcity (eg. Western Savaii)

SOPAC assistance (fund – JICA)

- Manono Is (1998),
- Savaii west (1999)
- yet to implement recommendations



Sanitation & Wastewater

- Existing sewage disposal pose enviro. & health risks
- Damaged river ecosystems
- Effluent AUA – affect near shore waters, reefs
- Live threatening – sea food source areas

SDS – establish centralized sewage system

Private sewage sys – companies/hotels



Funding

- Service coverage (capital)
- O & M (project sustainability)

Funding – rely mostly on aid

- Small/medium - NZ, Australia, Japan, Canada (EU)
- Major infrastructure – ADP, WB, EU

“Beggars cant be choosers” – standardization problem



Case Study

European Union Rural Water
Supply Project (EURWSP)

NW Upolu & SE Savaii



EURWSP (Details)

- Total Costs: SAT\$62,000,000 (USD\$20 M)
- Target Population : Upolu 37,000
Savaii 18,000
Total 55,000 (approx. 33% pop)

- Design demand: 1995 420 l/c/d
2005 290 l/c/d

- Scheme capacity: Upolu 15,000 m³/d (peak : 20,000 m³/d)
Savaii 7,000 m³/d (peak : 10,000 m³/d)

- Metered Connections: Upolu 5,000
Savaii 2,500

intake



transmission





transmission



transmission



Transmission mains



Settling tanks



Filteration process



Slow sand filters



Storage tank – 10,000 m³ (2.5 MG)



Borehole drilling





Contact tank





Cultural

Customary land ownership

- Not strictly adhere to father/son, but title successor (matai)
- Matai often not reside on land vs family authority
- Village vs Extended family authorities
- Land compensation - land valuation (destiny)

Ownership of river courses sensitive

- Still district/village water schemes
- Can use but not owned



Economical

SDS – one of the strategic areas “Improve infrastructure and services”

- Access to safe drinking water
- Efficient delivery of services
- Reliable infrastructure

SDS - theme “opportunities for all”

- aims to provide services to both urban & rural communities.
- highlighted by the slogan “o le mea e lelei mo Apia e lelei foi mo Savaii” thus the EURWSP.
- Political will



Legal

- Taking of Lands Act – power to SWA vs Customary land Tenure
- Legislation repetition of power – water conservation & use (DLSE, MAFFM, EPC, SWA)
- Legislation Conflicting interest – access & use of public land (eg SWA & MoW)



Mahalo

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