

Water Accounting in Namibia

By

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Water Net Symposium 25-29 October 2016

Water Resources Accounting 1990-2016

- Namibia started experimental water economic accounting in the early 1990s actual work started in 1993, 1997 -2001/2002 through the Donor funded Natural Resource Accounting Programme

Main objectives:

- To raise public awareness about scarcity of water in Namibia a limiting factor for development as result of arid, semi arid conditions
- To raise public awareness on the status water resources both ground, perennial surface and ephemeral surface water (Physical Water Stock Accounts)
- To raise public awareness on the annual use of water by various sectors of the economy and the economic contribution of water by sector (Water Flow Accounts for Namibia)
- Policy implications on issues of human welfare, water pollution, water saving, efficient and productive use of water resources

Water accounting & capacity building

- 1997, Water Account developed under water accounting project of Department of Water Affairs- with training of staff provided by Donor funded Natural Resource Accounting Programme DEA -MET
- 2001,2006, Water Accounts for Namibia was updated by consultants - with some capacity building for Ministry of Agriculture, Water and Forestry staff
- 2010, Water Accounts for Namibia by Egis Beceom International SADC Economic Accounting of water Use project- some training of staff
- February 2015 MAWF hosted a Water Accounting Training
- 2015, Natural Capital Accounting Feasibility & Fast Track Water Accounts – MET/GIZ funded Resources Mobilization project
- Stock/ Physical supply & Use Accounts with a number of capacity building events for water and other natural capital accounts
- MET established steering & technical working group on NCA

Fast track compilation of water accounts

Methodologies: SEEA Water

- **Three methodological components specific to Namibian conditions:**
 1. Physical system of flows for rainfall, surface water and groundwater
 2. Water supply structure and distribution, comprising the classification of activities and products as well as physical supply and use tables
 3. Economic use and value of water

Required accounts

The following sub-types of water accounts were needed:

- Physical stock and flow accounts: Define and account for the assets and stocks
- Hybrid accounts for production (esp. for tourism, irrigation, livestock farming, ...)
- Hybrid accounts for final consumption (esp. household)
- Expenditure accounts, financing accounts

Outlook:

- Emission / water quality accounts
- Water collection / sewerage accounts
- Environmental Services of Water in Namibia (Biodiversity, Flood and Drought Protection, Storage, Natural Purification of Water, Provisioning)

Estimation of surface water in million km³

		Surface Water			Subsurface	
	<i>Artificial Reservoirs km³</i>	<i>Lakes in Km³</i>	<i>Rivers in Km³</i>	<i>Ground water in Km³</i>	<i>Soil water in Km³</i>	<i>Total km³</i>
Opening stocks	0.23	4.80	0.10	1630.00	41.20	1676.30
Increases in Stocks						
<i>precipitation</i>	0.30	1.40	11.70	0.00	219.00	232.50
Inflows						
<i>Upstream territories</i>		12.00	31.70	2.10	0.00	33.80
<i>From other resources</i>				2.30	8.70	11.00
Decrease in Stocks						
<i>Abstraction</i>	0.10	0.00	0.17	0.17		0.44
<i>Evaporation</i>	0.15	9.80	3.70	0.00	230.00	228.70

Water supply and use

Supply, Use & Loss	1997	2001	2015
Dams+ Ephemeral rivers (installed capacity)	-100	-100	-100
Supply	83.8	96.6	103
Use	71	82.9	95
Loss	12.8	13.7	7.5
Groundwater (developed capacity)	150	150	165
Supply	112.5	121.8	130
Use	96.3	104.7	111
Loss	16.2	17.1	15
Perennial Rivers (Abstraction capacity)	-170	-170	-210
Supply	77	98	170
Use	66.2	85.9	89
Loss	10.8	12.6	12.5
Reclaimed (Recycled capacity)	-7.5	-7.5	-12.5
Supply	2.8	1.3	6.3
Use	2.3	1.2	6.2
Loss	0.5	0.1	0.1
Desalination			26
Total Supply	276.1	318.1	435.3
Total use	235.8	274.7	301.2
Total loss	39.8	43.4	35.1
Demand Total	334	334	513.5

Use of water in different sectors of the economy since 1997 to 2015, in million m³

Year	1997	2001	2015
Urban	65	65	80
Rural	10	10	11
Livestock	87	87	89
Irrigation	135	135	204
Mining	16	16	32
Tourism	19	19	27
Total	334	334	443

Challenge to water Accounting

- Water economic accounting is relatively new concept to some policy makers and resources managers in MAWF & other industries not seem to have grasped it
- Therefore the structure, budget and staff component allocated to the task of water economic accounting far less than required and lack capacity
- Lack of data on water supply and utilization by independent self providers in rural, industries and commercial farming areas
- Uncertainty as to whether policy makers and managers actually appreciate water economic accounts and use them in exercise of their water resources allocation and management duties
- Lack of Awareness raising on the importance of water accounts

Recommendations

- Water Accounting capacity building within MWAF (Staff & Management), Namibia Statistic Agency and the industries
- Short courses & qualifying
- Expand the scope of water Accounts to hybrid, Quality water accounts
- Public Awareness raising and dissemination of water economic account
- Efficient water pricing mechanism, reduce water subsidies to certain sections of the population
- Focus on water demand management more than water supply
- Steering & technical working Group continue, transparent & holistic water resources planning

Recommendations

- WRM Act 2013 Enforce monitoring and Reporting System-all water permit holders to be metered including basin water users e permits and be metered
- Permit system to sanction permit holders for failure to submit returns for monitoring and verification of water use
- Spatial upscale and maintenance of water measuring infrastructures/equipment for precipitation, runoff & ground water
- Integrated data base within MAWF
- Sensitise stakeholders on the importance of the data capturing