



COLLABORATION ON WATER RESOURCES MANAGEMENT

BETWEEN

REPUBLIC OF BOTSWANA

Ministry of Land Management Water and Sanitation Services

AND

REPUBLIC OF SOUTH KOREA

Ministry of Land Infrastructure and Transport



REPUBLIC OF BOTSWANA

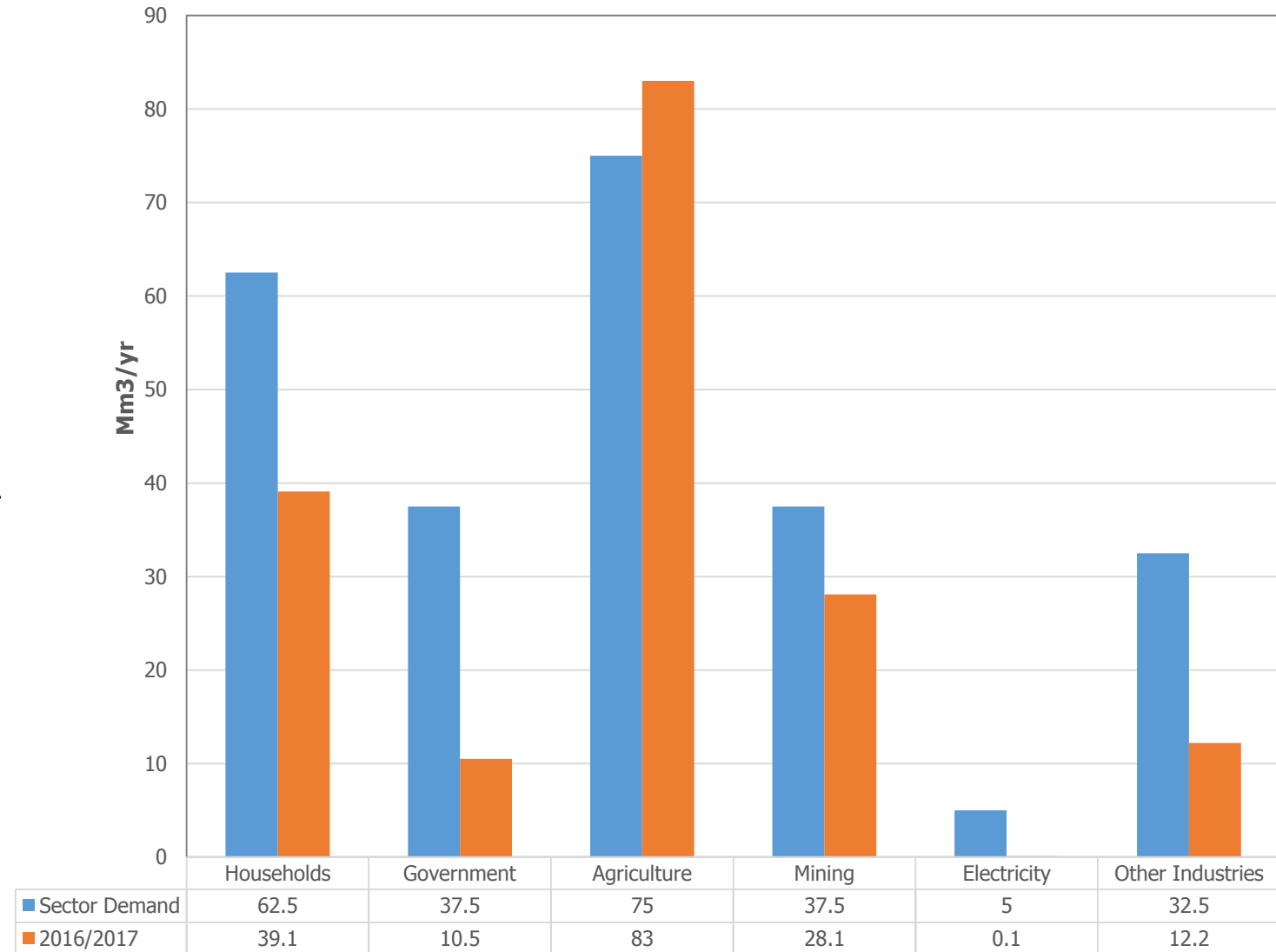
Background Information-Botswana

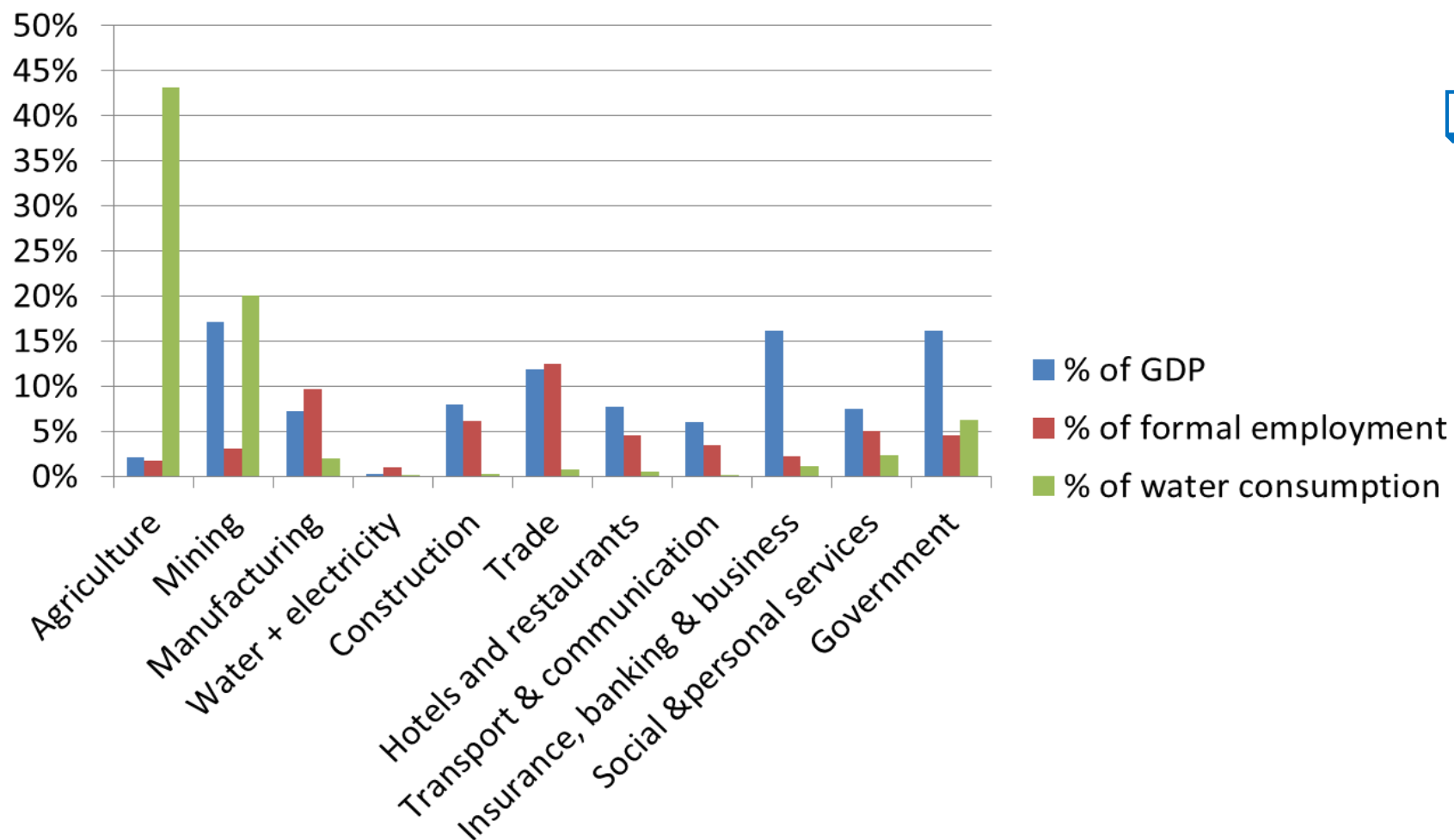


- **AREA 582,000 KM² ; POP 1.6m**
- **LANDLOCKED COUNTRY**
- **ARID TO SEMI ARID CLIMATE – Geographical location + physiography**
- **TOPOGRAPHY- FLAT -> Low surface runoff and low g/water recharge**
- **ERRATIC RAINFALLS / HIGH EVAPOTRANSPIRATION-Botswana has been experiencing frequent drought situation, exacerbated by increasing water demands.**
- **PERRENIAL RIVERS – TRANSBOUNDARY / EPHEMERAL RIVERS**
- **App. 80% GROUNDATER SOURCES**

Water Use by Sector

173MCM(78.6%)Water
Use against current
demand of 220MCM by
different sectors of
economy

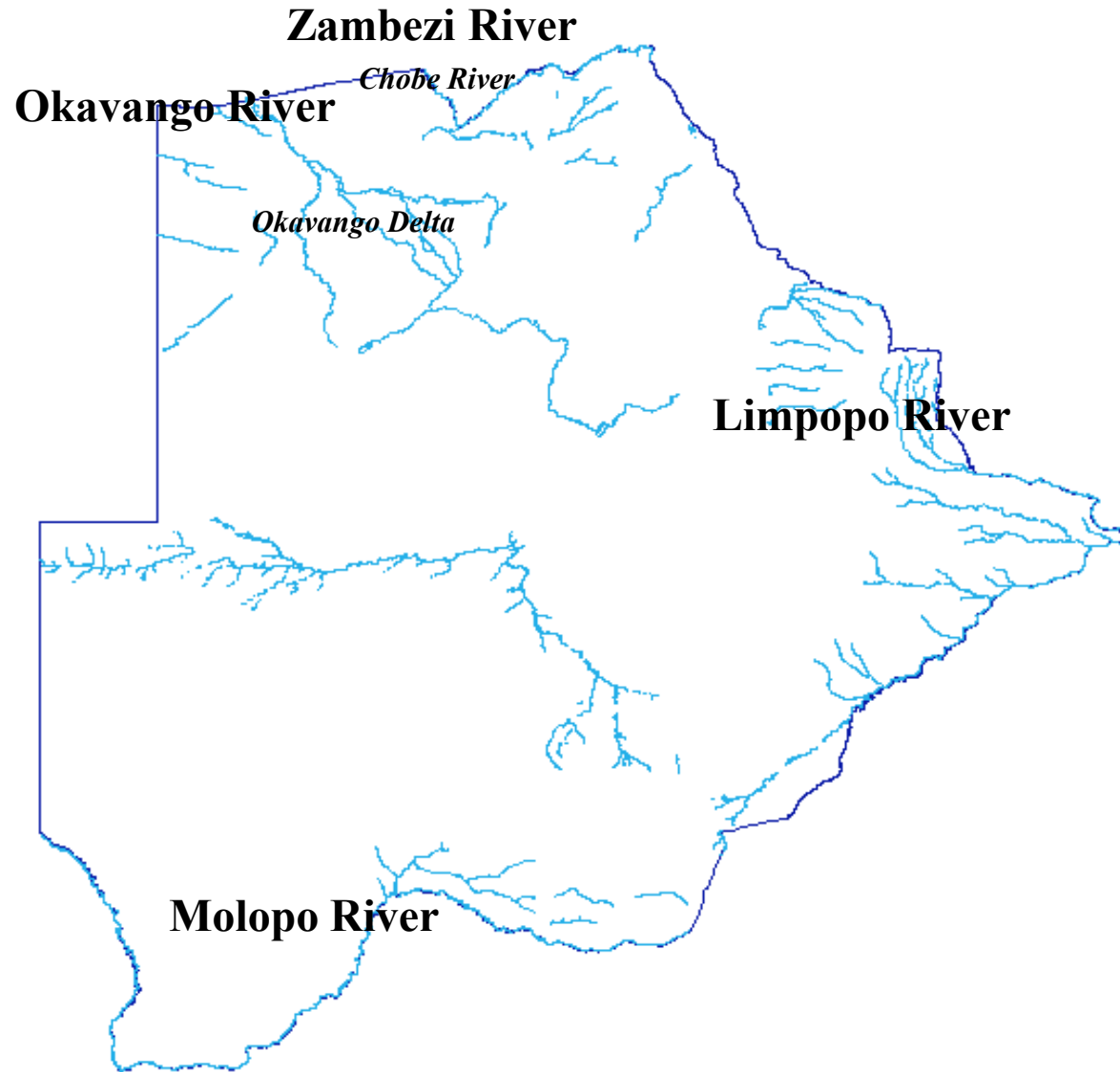




Water use efficiency should be part of decision making on economic diversification

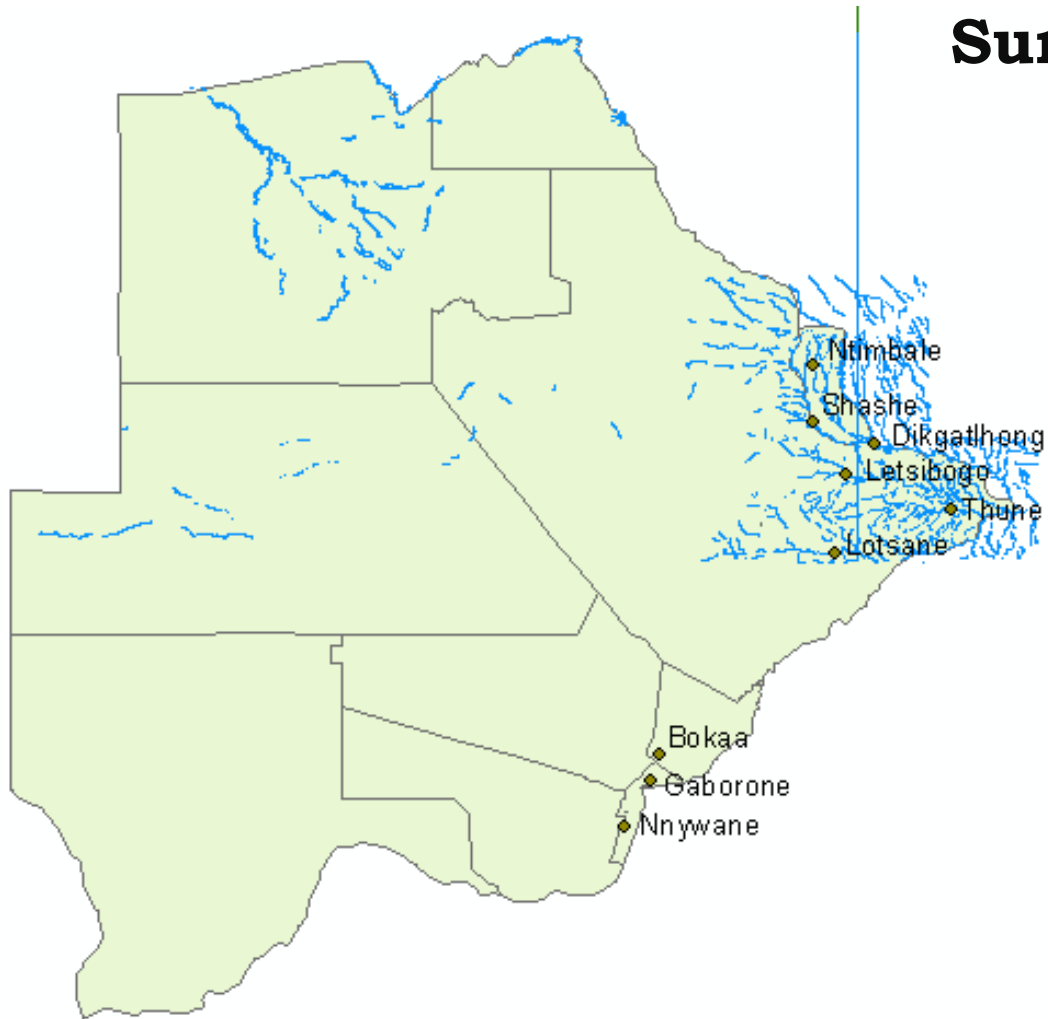
Water Resources Situation in Botswana

Surface Water Resources



- Okavango River has 10 000Mm³/a at the panhandle and only 2% at the outflow as the rest is lost through evapo-transpiration
- Zambezi has 41 000 Mm³/a of unutilized flow at Victoria Falls
- Limpopo River is heavily developed river system in both RSA and Botswana
- Molopo River is mainly a fossil river which rarely flows but is part of the major Orange River system in Namibia, Lesotho and South Africa
- Strategic Regional Water Transfers

Water Resources Situation in Botswana



Surface Water resources challenges

Major Dams on the Limpopo Basin

Located only along the Eastern Corridor of the Country

Challenges of disparity between reliable water resources and high water demand areas

Water Resources Situation in Botswana

Groundwater exploitation

- Currently cities, towns and villages supplied by WUC
- Debswana Mining Company:
 - For Orapa, Letlhakane, Damtshaa & Jwaneng Mines
- Private Farmers
 - For livestock-watering and limited irrigation
- At present there are around 30,000 officially-registered boreholes in Botswana
- Government's priority has been development of groundwater for household consumption

Groundwater resources challenges

- Escalating demand [Increasing population, poverty alleviation projects, industrialization, etc...]
- Water salinity in central and western Botswana. Some resources are unfit for human and even livestock consumption.
- Low recharge rates leading to groundwater mining i.e. abstraction exceeds recharge in most wellfields supplying villages & mines; declining water tables
- Groundwater pollution, leading to groundwater quality deterioration; e.g. Ramotswa
- Monitoring of abstraction of the private abstractors is difficult and in practice inadequate
- Conflicts between different abstractors

THE NEED FOR TECHNOLOGY TRANSFER AND CAPACITY BUILDING

Memorandum of Understanding-MOU

- MOU Between the Republic of Botswana and Republic of South Korea Signed in 29 May 2017
- Collaboration on Water Resources Management
- Implemented by DWA under MLWS and K-Water under MOLIT

Main areas of collaboration

- Implementation of the Total Water Management System for Botswana.
- Review and Update of the Botswana National Water Master Plan
- Joint project development for smart water management systems, water treatment and supply, water resource security or other projects such as Lesotho-Botswana Water Transfer project
- Capacity building on Smart Water Management Technology

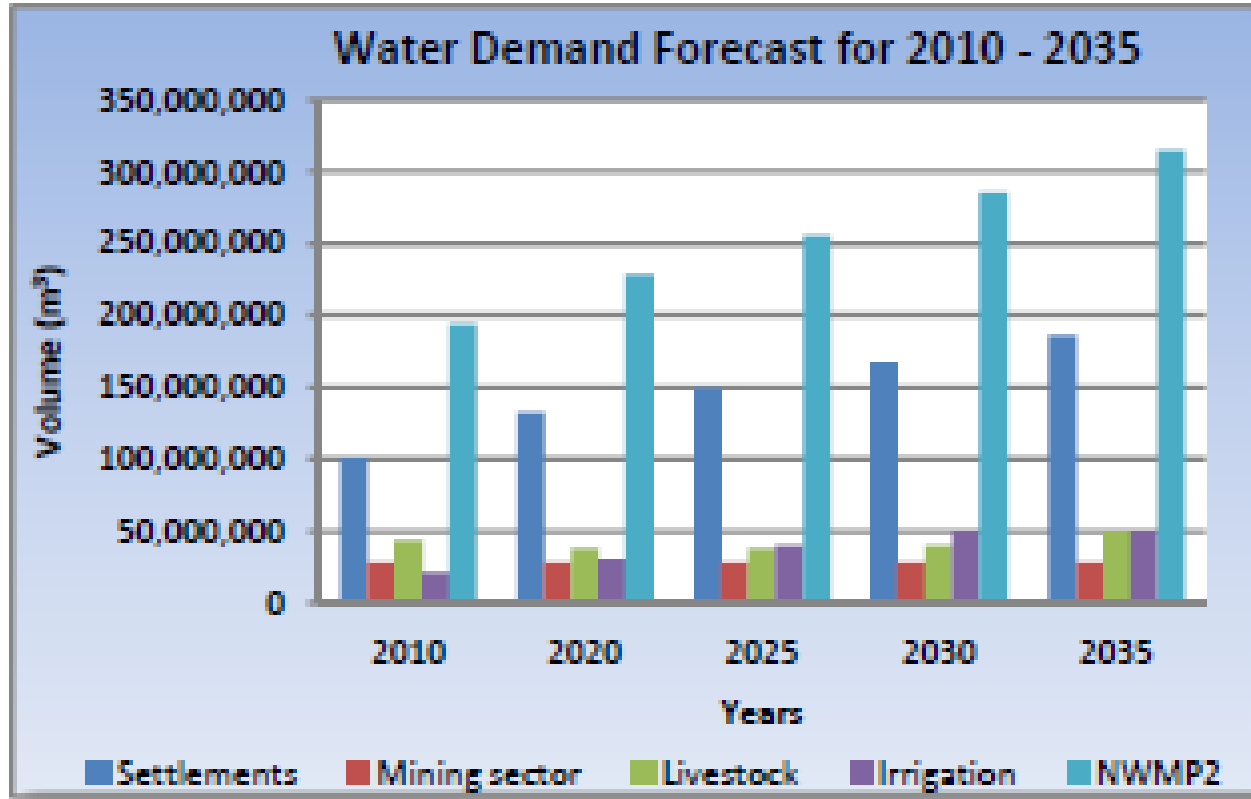
IMPLEMENTATION

➤ SOUTH KOREA GOVERNMENT PROVIDED US\$1 MILLION TOWARDS THE KICK-START OF THE NWMP REVIEW AND ITS UPDATE

➤ CAPACITY BUILDING ON SMART WATER MANAGEMENT TECHNOLOGY TOOK PLACE IN KOREA WITH 8 OFFICERS TRAINED

➤ THE GOVERNMENT OF BOTSWANA TO PROVIDE FINANCING START DEVELOPMENT OF THE TOTAL WATER MANAGEMENT SYSTEM

PROSPECTIVE PROJECTS TO MEET FUTURE DEMANDS



The estimated water demand for 2010 was 193MCM, the projections for 2020 and 2030 are 229MCM and 286MCM respectively

- **LESOTHO – BOTSWANA WATER TRANSFER PROJECT (150MCM)**
- **CHOBE ZAMBEZI WATER TRANSFER SCHEME (495MCM)**
- **TRANSBOUNDARY AQUIFER USE (MANAGED AQUIFER RECHARGE)**
- **POSSIBILITY FOR STORMWATER HARVESTING**
- **WASTERWATER REUSE**

