Republic of Sudan
Ministry of Irrigation & Water Resources

Public Water Corporation

WATER & SANITATION POLICY
NORTH SUDAN

PRESENTATION OF WORKING DRAFT
The Nation of Sudan
• The largest Country In Africa
• With Area of 2.5 million km²
• 15% of the land along the river Nile.
• Estimated present population 38 million
• North Sudan has 15 States
• With area of about 1.9km²
• And of population of about 29million
WATER SCARCITY & WATER QUALITY PROBLEMS

• Northern Sudan lies in arid and semi arid part of North Africa

• Drier climate makes water scarcity a major problem

• Occurrence of several cases of water borne and water based diseases reported in past years – Including many fatal cases

• Attributed to poor situation in Water and Sanitation – In Urban and Rural areas
Poor Situation of Water and Sanitation Due To:

- Lagging water development works
- Lack of awareness on sanitation - at all levels
- Poverty
- Poor planning, Shortage of funding
- Huge Displacement of people and
- Lack of clear policy for Water and Sanitation Sectors
PAST EFFORTS ON WATER POLICY FORMULATIONS

• In 1992 formulated national water policy on various sub-sectors - Emphasis on water and sanitation was limited

• In 2000, Sudan adopted a “National Water Policy” - deals Integrated Water Resources Management. Did not address Water and Sanitation adequately

• In 2006 a draft National Water Supply and Sanitation policy prepared by sector experts - which did not go through the consultative process of policy formulation

THUS NOW THERE IS NEED FOR - POLICY ON WATER AND SANITATION. – (For the MDG and Beyond.)
## Available Water Resources

<table>
<thead>
<tr>
<th>Item No</th>
<th>Water Resources From</th>
<th>Quantity In bcm</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Sudan’s Present Share Nile System - (1959 Nile Agreement)</td>
<td>20.5</td>
</tr>
<tr>
<td>2</td>
<td>Wadis Waters</td>
<td>5 to 7</td>
</tr>
<tr>
<td>3</td>
<td>Ground waters - Renewable</td>
<td>4</td>
</tr>
<tr>
<td>4</td>
<td>Total*</td>
<td>29.5 – 31.5</td>
</tr>
</tbody>
</table>
## Water Demand Projections
(From MIWR Plans)

<table>
<thead>
<tr>
<th>Year</th>
<th>Irrigation</th>
<th>Domestic water</th>
<th>Animals Others</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>2010</td>
<td>27.1</td>
<td>1.1</td>
<td>3.9</td>
<td>32.1</td>
</tr>
<tr>
<td>2020</td>
<td>32.6</td>
<td>1.9</td>
<td>5.1</td>
<td>39.6</td>
</tr>
<tr>
<td>2025</td>
<td>40.3</td>
<td>2.5</td>
<td>5.3</td>
<td>48.1</td>
</tr>
<tr>
<td>2027</td>
<td>42.5</td>
<td>2.8</td>
<td>7.3</td>
<td>52.5</td>
</tr>
</tbody>
</table>
Water Scarcity is Becoming Real

- By 2010 the Demand is seen to be greater than the Available Supply
- Geographical Distribution of available water not even
- In vast areas water scarcity is serious problem
## Water & Sanitation Coverage

<table>
<thead>
<tr>
<th>Year</th>
<th>Area</th>
<th>Access to safe drinking water (%)</th>
<th>Access to adequate sanitation (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Total</td>
<td>Urban</td>
</tr>
<tr>
<td>1990</td>
<td>National</td>
<td>64</td>
<td>85</td>
</tr>
<tr>
<td>2000</td>
<td>National</td>
<td>59.8</td>
<td>79.2</td>
</tr>
<tr>
<td>2006</td>
<td>NS</td>
<td>58.7</td>
<td>69.4</td>
</tr>
<tr>
<td></td>
<td>SS</td>
<td>48.3</td>
<td></td>
</tr>
<tr>
<td></td>
<td>National</td>
<td>56.1</td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td>NS</td>
<td>82</td>
<td>93</td>
</tr>
<tr>
<td>Gap</td>
<td>NS</td>
<td>23.3</td>
<td>23.6</td>
</tr>
</tbody>
</table>
Water and Sanitation Problems and Their Health Impact

- Lack of Safe Water,
- Inadequate Sanitation and
- Poor Hygiene Practices

- High child mortality and morbidity rate
  - 28% of U5 children with diarrhea (in 2006)
  - 53.55% in West Equatoria (South Sudan)
  - 15.5% Red Sea (North Sudan).

- Several Cholera epidemics Reported
- Some Fatal
- School Water and Sanitation also Inadequate
Management and Sustainability

- Water and Sanitation have decentralized structure
- Water supply
  - at federal level under PWC
  - at state level under SWC
  - WES under PWC also coordinates project implementation and monitoring
- Groundwater and Wadies Directorate (GWWD) responsible for ground and surface water studies.
Management and Sustainability

- **Sanitation**
  - At federal level structure unclear - since 1981
  - At state level both WES and SWC involved in sanitation works

- **Village level Water management under communities since decentralization** – But without adequate preparation to enable them function properly
Management and Sustainability

- 30% of rural water systems are indicated as nonfunctional - and
- Major Reasons are:
  - Inadequate funds
  - Shortage of spare parts
  - Improper water charges collection and management
  - Village Water money used for other purposes
Major - Immediate and Underlying Problems of WASH

- Low Coverage Level and Low development rate
- Inadequate Funding
- Limited Implementation Capacity
- Deficiencies in Institutional setups and Policy Instruments
- Problems of Water Quality and Quantity
- Gender Equity
OVERALL GOALS AND OBJECTIVES

• The Water and Sanitation Policy will ensure that the short term and long term needs of all the Sudanese people for water and sanitation in rural and urban areas including in the nomadic constituents are fully addressed with due considerations of the environment and sustainable resources management.

• The integrated delivery of water and sanitation services in a sustainable way ensures the maintenance of hygienic conditions at the home and in the community environment thus making this an effective objective of the policy.
OVERALL GOALS AND OBJECTIVES

• The policy aims to alleviate the public health standards of the people as whole by using these less expensive preventive approaches to public health maintenance besides the more expensive curative approaches.
GUIDING PRINCIPLES & KEY STRATEGIES

For Water Supply – Rural / Urban

• Water is a fundamental human necessity. Water -> Life -> A Human Right

• Water has social and economic values and should be accordingly considered. Thus
  - Water costing should consider social needs

• The vulnerable sections of community – children, women and elderly should be given attention and priority of service.
GUIDING PRINCIPLES & KEY STRATEGIES

For Water Supply – Rural / Urban

• **Water use priority** - Domestic water use has the highest priority

• **Water is the instrument for peace and shared prosperity** – A shared commodity needs to be used carefully and equitably by all beneficiaries
GUIDING PRINCIPLES & KEY STRATEGIES

Sanitation – Rural / Urban

- **The polluter pays**
- *The national government is the custodian of all the water resources - it protects water from pollution*
- *Rural Sanitation is primarily the responsibility of each household and the community - (with government providing enabling support)*
- *The vulnerable sections of community – children, women and elderly should be given attention and priority of sanitation promotion.*
WATER SUPPLY POLICIES – RURAL AND URBAN

1. Access to safe and adequate water supply shall be made available to all people of north Sudan both in rural and urban areas within the shortest time possible

- Need to increase in the current coverage level
- Bridge available gaps in the growth of water supply development to achieve the MDG
- Coverage level for North Sudan should reach 60% in 2010, 82% in 2015, 90% in 2020 and 100% in 2025.
Strategies for Rural Water Supply

• Domestic water will be given highest priority among other water uses

• Community based and demand driven approaches shall be used

• Leadership role of women in community water supply will be encouraged

• Government at federal/state levels shall take enabling measures – e.g. program funding, training, promotion, logistic support
WATER SUPPLY POLICIES – RURAL AND URBAN

Strategies for Rural Water Supply – continued

• Priority to the vulnerable sections of the communities shall be given

• The nomadic population shall be provided with water supply - including for their livestock with consideration to the environment

• Community shall protect its water sources

• Water supply and sanitation programs shall be delivered in integrated packages
Strategies for Urban Water Supply

1. Domestic water use shall be given the highest priority - including water for waste removal.
2. Urban systems shall be financially self-supporting and administratively independent.
3. Urban water system shall be run by well trained qualified personnel under effective and efficient management – with capacity building support to be given by government.
4. Priority of service to be given to the vulnerable sections of the urban communities.
2. The service level in rural and urban water supply systems should ensure availability of adequate and safe water to the communities at reasonable distance, at all times and at affordable cost.

- Minimum requirements include – In Rural Areas
  - Consumption rate = 20 l/cap/day
  - Water quality = Satisfy WHO guidelines
  - Access Distance = > 500 meters
WATER SUPPLY POLICIES – RURAL AND URBAN - continued

- Minimum requirements in Urban Areas include
  
  • Consumption rate from
    – House connection = 90 l/cap/day
    – Yard connection = 60 l/cap/day and
    – Public tap = 30 l/cap/day
  
  • Access from public taps = > 250 meters.
  
  • Water quality = Satisfy WHO guidelines

- Rural water system standard designs and technical guidelines prepared by PWC should be followed
3. Appropriate technology choices in water supply systems shall be pursued to ensure sustainability and affordability of the systems and various options shall be examined for possible adoption

Strategies to be followed

– Technology selected should be appropriate to local skills, management and financing capacity in order to ensure sustainability

– Technologies which require minimal outside technical and material inputs should be explored
WATER SUPPLY POLICIES – RURAL AND URBAN - continued

- Various water treatment technologies to manage proper water quality levels shall be applied - Disinfection and other appropriate treatment techniques should be applied as mandatory routine practices to safeguard water quality

- Applied research and development on various technology options will be encouraged and pursued to make water systems safe, affordable and sustainable.

- Use of high water consuming facilities in urban areas should be avoided and the introduction water saving facilities should be encouraged through preferential importation and enhancement of local manufacture of such goods

- Development of internal technical capacity or home grown technologies, the local manufacturing of water supply materials and equipment will be encouraged
4. Water supply development - both for rural and urban communities will be accorded high priority setting, and adequate funding commensurate to its needs shall be allocated for it, in-order to meet the MDG and the targets beyond.

- The government at federal and state levels shall allocate adequate financial resources for water supply development both in rural and urban communities. For this the political will and commitment of the government to make water supply development a priority will be the driving force.
For rural water supplies, the investment cost for the establishment of water supply schemes shall be covered by funds from the government, development partners and the beneficiary communities as much as they can.

The total operation and maintenance cost shall be covered by the beneficiary community through water charge fees.
For water users that are genuinely found unable to pay, the community shall make considerations to cover the cost from the charges collected from the rest of the community members and the water tariff shall be established making these social considerations.

In water supplies for nomadic areas livestock owners shall be charged for the water used by the herds of livestock based on an established tariff rate for the specific area using cost per head of watered animal.
WATER SUPPLY POLICIES – RURAL AND URBAN - continued

- Money collected from water charges shall be used for the running and upkeep of the water system. Proper accounting books shall be kept to register financial management of the system.

- Rural water supplies shall be owned by the communities and they shall be managed by them. And all administrative, technical and financial management of the system shall be their responsibility.

- The government shall responsible for building capacity to enable the communities manage their water systems effectively. Through training, coaching, monitoring & support
In urban water supplies the investment cost and the operation and maintenance cost as well as the replacement cost including any financial costs related to the investment shall be borne by the urban community as a whole.

The cost shall be covered through the institution of a tariff structure that recovers the investment costs within reasonable duration.

The tariff structure shall be responsive to the low income and the poor segments of the urban communities. It shall have cross-subsidy structure where by high volume consumers pay higher rates and low quantity consumers are charged at the minimum tariff rate.
WATER SUPPLY POLICIES –
RURAL AND URBAN - continued

5. **Stakeholders in the water supply sector both in rural and urban shall perform their roles and responsibilities with clarity and coordination, complementing each other in fulfilling their mandates and commitments for achieving the established water supply targets**

- **The community** is the owner of the rural water scheme - and through its leadership - the water committee as well as its individual members as required - it shall be responsible for actively participating in the initiation of the water scheme, in the planning and implementation of the scheme, in operating and managing of the scheme, including covering the operating and maintenance costs, in administering its finances at cost effective levels
The government at Federal level, through PWC and GWWD and at State level through SWC, WES and GWWD branch offices – is responsible for

- Studies, planning and programming of the development of water supply systems - both rural and urban.

- Mobilizing financial, material and technical resources for the implementation water supply development works, as well as for capacity building, and training functions for enabling rural communities and urban public water agencies to effectively run and manage their respective water systems. And for placing appropriate policy instruments, legislation and institutional structures.
Development partners – In the short term shall be engaged in the water supply sector with direct development assistance to compliment government and community inputs. In the long term their contributions shall be mainly in capacity building to support communities towards self-sufficiency in the water supply sector.

- Shall provide assistance in program funding, and implementation as well as in capacity building activities. They shall render their assistance under the guidance and direction of the PWC at Federal level and the SWC and the WES office at State level periodically reporting to them on their performance of their programs.

- The modalities of assistance should be geared towards enabling national capacity building and self-sufficiency in the near future.
• The private sector shall be engaged actively in the implementation of water supply programs both in the preparation of designs and construction works. Such activities such as drilling and borehole construction, as well as water supply construction and equipment supply and installation works could be done more effectively by the private sector.

• It shall be encouraged in the local manufacture of water supply construction materials and equipment to ensure national self-sufficiency and efficiency in the water sector development.
Civic Organizations - have the important role of awareness creation and advocacy in water supply development, and in the promotion of proper use of water for hygienic living – Also in community mobilization for fund raising and labor contribution

Educational Institutions – have the responsibility of educating and training various personnel for the water sector, among them the technicians, accountants, administrators, engineers and other personnel and professionals

The media including, the radio, television, news papers and the internet have the important role of promoting proper water management culture and in educating the population in water use and hygienic living
6. **Existing Institutional & Legislative Frameworks shall be strengthened and new ones instituted to enable the water supply sector fulfill its goals**

- **At federal level** as well as **at state level** the PWC and its subsidiary offices shall be strengthened with appropriate capacity building measures to enable it accomplish its growing roles and responsibilities adequately.

- **At State level** the roles and responsibilities of the government organizations involved in the water supply activities shall be adequately clarified.

- In regard to water supply legislation, an appropriate drinking water standards shall be studied and established for enforceable water quality controls.
OTHER POLICIES AND THEIR LINKAGE TO THE WATER SUPPLY POLICY

- This policy is in full agreement to the Integrated Water Resources Management (IWRM) policy and it considers its application as essential to the healthy development of the water supply sector.

- The sectoral policies of other water using sectors should be in full agreement to the IWRM policy.

- Those sectoral water use policies not yet available should be formulated in conformity with the IWRM and with full respect of the water supply policy.
OTHER POLICIES AND THEIR LINKAGE TO THE WATER SUPPLY POLICY

- Linkages of Water Use Policies within the IWRM Policy

Diagram:
- Agricultural Water Use Policy
- Industrial Water Use Policy
- Domestic Water Use Policy
- Commercial, Tourism & Other Water Use Policy
- Mining Water Use Policy

I W R M POLICY IN PART
SANITATION POLICIES – RURAL & URBAN

1. Access to proper sanitation shall be attained in both rural and urban communities with in the shortest time possible to ensure hygienic and healthy living conditions for all the Sudanese people

- Need to increase coverage level which is now 42%. And bridge available gaps in the growth of sanitation coverage to achieve the MDG

- Coverage level for North Sudan should reach 45% in 2010, 67% in 2015, 80% in 2020 and 100% in 2025.
Strategies for rural sanitation include

- **Community led total sanitation (CLTS) shall be the main strategy to follow.** It uses community-based and demand-driven approaches.

- **Holistic approach to sanitation development shall be adopted - aiming to achieve total sanitation in the community.**

- **The following five building blocks of rural sanitation shall be applied**
  - Latrine coverage and use
  - Safe water handling and use
  - Hand washing
  - Food hygiene
  - Keeping clean home environment
SANITATION POLICIES – RURAL & URBAN - Continued

- In latrine coverage and use - the aim and commitment of each community, starting with its leadership, shall be to make their respective village a total open-defecation-free community, and there after continue to sustain proper sanitation practices with in their area.

- The government and its partners including civic organizations have the responsibility of promoting and supporting sanitation programs
SANITATION POLICIES – RURAL & URBAN - Continued

- Awareness and demand creation to win a committed community shall be the aim of sanitation promotions and advocacy measures.

- Sanitation and hygiene promotion measures that are fitting to the local conditions – with due respect to existing safe practices, religious beliefs and socio-cultural norms in the specific locality shall be applied.

- The Sanitation Promotion Centers established in the various states at Mahalia level shall continue as demonstration centers.
SANITATION POLICIES – RURAL & URBAN - Continued

- Each household shall be the responsible for its sanitation tasks within its yard. This becomes easily achievable within an aware and committed community.

- The genuinely poor in the community requiring material assistance to build the household latrine should be identified with care and support should be provided by the government and its partners. The vulnerable groups shall be given priority of support.

- Availability of Sanitation and basic hygienic goods at affordable prices should be guaranteed in rural communities.

- The role of women in community sanitation tasks should be fully recognized and promotion shall be directed to their needs and their active participation in hygiene education.
SANITATION POLICIES – RURAL & URBAN - Continued

Strategies in Urban Sanitation Include

- The collection, removal and safe disposal of residential and commercial wastewaters through central sewerage system shall be given serious attention and priority in government development programs.

- The collection and safe disposal of solid wastes from residential and commercial areas will be the next in the priority setting of urban sanitation.

- Each town shall have administratively independent and financially self-supporting public agency for its sewerage and solid waste management in a sustainable manner. It could be linked to the water supply public agency of the town.
SANITATION POLICIES – RURAL & URBAN - Continued

2. Appropriate technology choices in rural and urban sanitation shall be pursued to ensure sustainability and affordability of the systems and various options shall be examined for possible adoption

- The Sanitation Promotion Center in the Mahalia shall study develop and demonstrate various technology options for the sub-structure, for the slab and super-structure based on available local materials, local skills, and local conditions. The technology should be affordable and sustainable.
Strategies for urban sanitation

- Sewage collection from households and commercial facilities using various options such as septic tanks and sewerage system should be encouraged with due consideration to cost effectiveness and sustainable management.

- The use of decentralized zonal collection system in combination with appropriately located treatment plants, such as oxidation ponds and proper safe-disposal injection-wells shall be studied and properly designed and implemented.

- The collection of garbage with segregation of the waste at or near its point of generation shall be applied for selective handling and treatment purposes.
Zonal garbage collection and safe disposal areas shall be used. Disposal areas shall be selected with care to not contaminate ground and surface water resources.

Wastes from garages, workshops and industries shall be handled separately from residential and commercial waste in-order to avoid contamination by toxic items from these sources.

Storm water disposal system should have separate network system from the residential sewer system to avoid excessive contamination of the storm waters. They shall be a properly designed network of tertiary, secondary and primary drains associated with existing roads with adequate capacity to handle the annual runoff water from the urban community.
3. Sanitation - both for rural and urban communities will shall be accorded high priority setting, and adequate funding commensurate to its needs shall be allocated for it, in-order to meet the MDG and the targets beyond

- The government at federal and state levels shall allocate adequate financial resources for sanitation development mainly for urban communities. Funding sources shall be government own finances as budgetary allocations, funds from both external and internal sources.

- For urban sanitation, as in sewerage system, the operation and maintenance cost as well as the replace cost including any financial costs related to the investment shall be borne by the urban community as a whole.
SANITATION POLICIES – RURAL & URBAN - Continued

4. **Stakeholders in both rural and urban sanitation shall perform their roles and responsibilities with clarity and coordination, complementing each other in fulfilling their mandates & commitments for achieving the established sanitation targets.**

**The community -**

In **rural sanitation**, the community - through its leadership and the WASH committee - shall be responsible for actively participating in the initiation of the sanitation scheme. Introduction of community led total sanitation is its aim.

In **urban sanitation** the community is served by a public sewerage agency which owns the system and runs it charging the community for the services it provides.
The government is responsible for:

- Mobilizing financial, material and technical resources for the implementation of sanitation development works for both urban and rural sanitation.

- Awareness creation, promotional activities and taking enabling measures, including training...

- Placing appropriate policy instruments, legislation and institutional structures to guide, direct, regulate and manage the sanitation sector to achieve its targeted goals.

The institutional structure for sanitation needs to be reorganized and strengthened.
SANITATION POLICIES – RURAL & URBAN - Continued

Development partners will - Provide support to programs both technical, financial, material - including capacity building assistances under the direction of PWC & MoH

The private sector will - Participate in study design and construction of urban sanitation works - In the manufacture and supply of sanitation materials and tools

Civic Organizations will - Assist in sanitation promotion activities, awareness creation and fund raising functions

Educational Institutions and The Media - Assist in education of sanitation personnel, hygiene education, awareness creation
SANITATION POLICIES – RURAL & URBAN - Continued

5. Existing Institutional and Legislative Frameworks shall be reviewed and strengthened and new ones instituted to enable the sanitation sector fulfill its objectives.

- At federal level organize an office responsible for urban sewerage systems including for the services of wastewater and solid waste collection and safe disposal systems - most appropriately at PWC

- At state level strengthen the coordinated implementation of rural sanitation programs

- Capacity building measures should be taken to enable institutions to adequately perform their growing roles and responsibilities

- Law to protect ground waters and surface waters with reference to penalties to offenders needs be enacted
SCHOOLS, HEALTH FACILITIES AND RELIGIOUS INSTITUTIONS - WATER AND SANITATION POLICY

1. All school children shall have a healthy learning environment, including access to and use of clean, child-friendly sanitation facilities, hand washing and water supply.

2. Patients, including the disabled and staff of health facilities shall have access to appropriate sanitation services with hand washing facilities and reliable water supply.

3. Religious institutions shall have access to hygienic facilities for drinking water and sanitation.
SANITATION POLICIES – RURAL & URBAN - Continued

OTHER POLICIES AND THEIR LINKAGES TO THE SANITATION POLICY

- The environmental policy encompasses the various sectoral policies liked to sanitation policy. They include water, health, education, commerce & tourism, industry and agriculture.

- Policies that are not yet available need to be formulated in line with environmental policy and they should be in harmony with sanitation policy.
SANITATION POLICIES – RURAL & URBAN - Continued

Policy linkages to the Sanitation Policy

Part of the Environmental Policy
THANK YOU