

Integrated Domestic Water Management



Workshop

Date: 5th June

Venue: TARA Gram Orcha

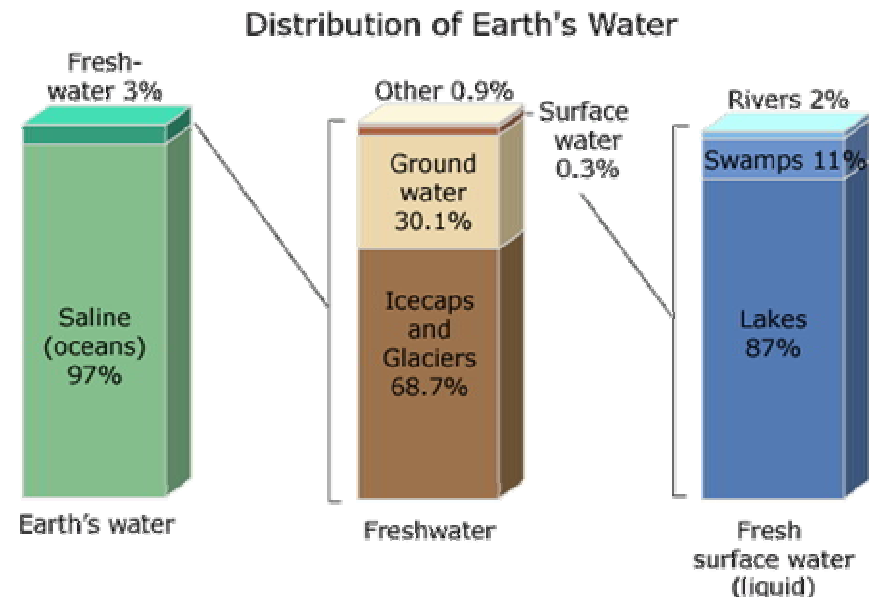
INTRODUCTION

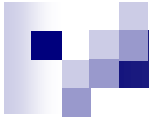
Water forms the very basis of life

- It covers 71% - Earth's surface
- 3 % - fresh water
- 69 % - in glaciers and icecaps
- 30% - ground water
- 0.3 % - rivers and lakes

• By 2025 more than half of the world population will be facing water-based vulnerability

• In the Indian subcontinent ,actual distribution of water resources over space and time limits access to certain geographic regions and is confined to only certain months of the year.





- Of the 1869 km³ available as annual surface runoff, only an estimated 1122 km³ can be exploited.
- India's per capita surface water availability in 1991 and 2001 were 2309 m³ and 1902 m³ and are projected to reduce to 1401 m³ and 1191 m³ by 2025 and 2050.
- According to World Bank report, "Unless water management practices are changed India will face a severe water crisis within the next two decades and will have neither the cash to build new infrastructure nor the water needed by its growing economy and rising population."
- Agro-climatic regions such as those of semi-arid areas (Bundelkhand, Gujarat, Rajasthan and Maharashtra) are considered particularly vulnerable to water stress.

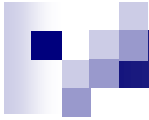


Issues and Concerns

- **Overexploitation of groundwater leading to:**
 - reduction of low flows in rivers
 - declining of the groundwater resources
 - salt water intrusion in aquifers of coastal areas
- **Over canal-irrigation in some of the command areas has resulted in water logging and salinity**
- **Quality of surface and groundwater resources is deteriorating due to increasing pollutant loads from point (identifiable source) and non-point (spread out throughout a large area) sources.**



- **Agricultural, industrial and domestic uses competing more and more for a limited supply of water.**
- **In spite of the importance domestic water usages has in our daily life it is often neglected in national policies and programs**
- **Domestic water usage is generally the prerogative of women. That can lead to serious social implications in terms of lack of education and livelihood opportunities for women caging them in the vicious cycle of poverty.**
- **Data on water resources are ‘classified’ or inaccessible**



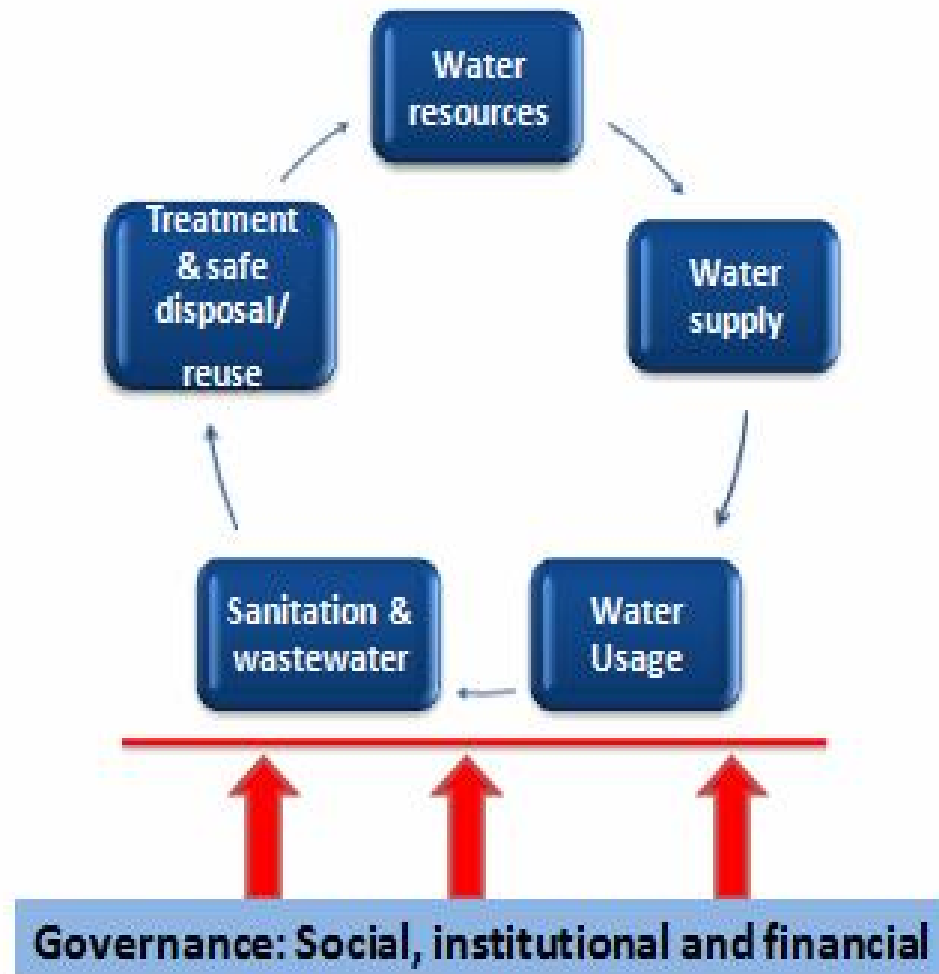
- **Nina Brooks in her paper entitled “Imminent water crisis in India” notes: “India’s water crisis is predominantly a manmade problem”.**
- **Lack of institutional mechanisms to plan, coordinate, and implement water development across state boundaries and users.**
- **Village level institutions, which have the largest stake in the use of these resources, play negligible role in managing them.**
- **A need for integrating the various phases of the water cycle to enable communities to manage their water resources in a sustainable manner.**



Integrated Domestic Water Management

- Aims at providing safe, sustainable water for all.
- Emphasis on community owned, managed systems with appropriate institutional mechanisms to ensure inclusion and equity
- Key principles are integration and convergence
- Driven by strong Panchayati raj or village level institutions
- Promotes integrated handling of issues around domestic water supply, rational use, reuse and recharge to arrive at a holistic solution

IDWM



Cornerstones of IDWM






Stakeholders Participation

- **Communities ,the true owners of water resources ,so management should be placed in their hands.**
- **Local stakeholders, particularly the village communities themselves are the best judge of their water related needs**
- **Not only facilitates smooth delivery of service but also enable leveraging for added benefits.**
- **Management of the water resources should incorporate a participatory approach by involving :**
 - ☐ various governmental agencies
 - ☐ the users
 - ☐ other stakeholders



- **When the community has been involved from planning stage, the programme has become sustainable**
- **Involvement of community in monitoring of water supply works should be primary condition for release of funds for completed work.**
- **Need to focus on changing behaviour patterns.**



Institutional Systems for Sustainability

- **IDWM emphasizes creation of community institutions that can be entrusted with management responsibilities**

- **These institutions should:**
 - ☐ include representation from different sections of society.
 - ☐ put into operation the decisions taken by community with regard to tariff structure
 - ☐ collection of monthly water charges from the users
 - ☐ will have the ownership of the assets created

- **Convergence of various programmes for funds and physical sustenance is also a vital aspect.**



Examples:-

- **The National Rural Employment Guarantee Programme (NREGP) has seven identified work component related to water**
- **Backward Region Grant Fund (BRGF)**
- **Artificial recharge of groundwater schemes and rain water harvesting**
- **Restoration of water bodies scheme (both pilot and external assisted) by Ministry of Water Resources the National Project for Renovation of Water Bodies**
- **National Afforestation Programme**
- **River Valley Project**
- **Flood Prone River Programme**
- **Integrated Wasteland Development Programme**
- **Hariyali**



Environmental Resource Conservation

- **In the planning, installation and operation of water systems, preservation of environment and ecological balance should be a primary consideration.**
- **Different initiatives like rain water harvesting, field bunding, tree plantation, etc should be included in the system**
- **Water secure regions satisfy the socio-economic and cultural requirement of water while making available required quantity for sustenance of the ecosystems.**
- **Witnessing the water crisis in the country, it has become imperative to bring science and policy constructively together to stop the direction of continuing damage and reverse the damage.**



Checklist of Indicators



W ATER AUGMENTATION AND WATER SUPPLY

a.Source protection

	Parameters	IDWM target	Remarks
a	Recharging of water sources done based on a watershed approach	Yes	Non negotiable
b	Depletion in water levels or drying up leading to reduction in yield	No	Non negotiable
c	No forced change in source in the last 2-3 years	No	Non negotiable
d	Repeated incidences of seasonal scarcity [during dry months (summer)]	No	Non negotiable
e	Village, if required, considering conjunctive use with 2 sources (groundwater, surface, rain)	Yes	Non negotiable
f	Toilets, pits and drains contaminating groundwater	No	Non negotiable
g	Sources protected; wastewater and solid waste not accumulating near water sources	Yes	Non negotiable



b. Planning

	Parameters	IDWM target	Remarks
a	Active participation of the community in village water security planning, implementation and monitoring	Yes	Non negotiable
b	Careful selection of water sources (tube well) so as to reduce the cost of infrastructure and cost of supply and use of existing infrastructure	Yes	Non negotiable
c	All household domestic water requirements [seven avatars] accounted for in demand calculations	Yes	Non negotiable
d	Participatory water budgeting done every year	Yes	Non negotiable
e	Community contribution to infrastructure	Yes	Negotiable



c. Infrastructure

	Parameters	IDWM target	Remarks
a	100% coverage by community/individual water systems (all marginalised and vulnerable population serviced)	Yes	Non negotiable
b	All schools have water supply	Yes	Non negotiable
c	Water available daily throughout the year; Supply at least once in a day (to all marginalised and vulnerable population serviced)	Yes	Non negotiable
d	Storage facilities available at community level and household level to deal with fluctuations (covering all households; all marginalised and vulnerable population covered)	Yes	Non negotiable
e	Water available at a pre determined and a convenient time (indicate the time as decided by community)	Yes	Non negotiable
f	Water available at convenient distance from the door step; no one seen waiting for less than half an hour [pl indicate the waiting time] or carrying water from less than 500 m (or as decided by the community) [please indicate the distance covered]	No	Non negotiable

d. Operation & Management

	Parameters	IDWM target	Remarks
a	Human resources at GP level and skill sets available for O&M; local youth trained on water supply O&M and repairs	Yes	Non negotiable
b	Complete recovery of O&M cost; Indicate the system for cost recovery (volumetric or flat rate); indicate what % O&M cost recovered	Yes	Non Negotiable
c	Tool kits for GP level operation as well as maintenance	Yes	Non negotiable
d	More than 15% water lost in leaks/inefficiency in the system; have meters at pump house and meters at user level	No	Non negotiable
e	Disruption in water supply due to O&M related issues more than the number of days acceptable to the local community (indicate number of days as decided by community)	No	
f	Repairs in infrastructure attended in less than 2 days	Yes	Non negotiable
g	Participatory water tariff fixing; Community decides on the tariffs fully understanding affordability and financial sustainability of the project.	Yes	Non Negotiable; Volumetric tariff is desirable but negotiable
h	Water affordable to all; No one denied lifeline water(55 Litres) due to lack of paying capacity	Yes	Non negotiable
i	Metering of water supply in all households and recovery of O&M costs	Yes	Non Negotiable
j	Volumetric tariff/pricing	Yes	Desirable, Negotiable



e. Water quality

	Parameters	IDWM target	Remarks
a	Water potable (for drinking and cooking) [confirming to IS 10500 throughout the year]. Parameters of consideration- essential Parameters: <i>PH, Bacteria, Nitrate, Iron, Fluoride, Arsenic and TDS</i>	Yes	Non negotiable
b	Water quality tested by the community twice a year and information disseminated and follow up action taken	Yes	Non negotiable
c	Alternate sources for water quality affected areas	Yes	Non negotiable
d	Reduction in water borne diseases in the village validated by ASHA; No deaths reported	No	Non negotiable



II. SANITATION

	Parameters	IDWM target	Remarks
a	No open defecation(ODF) in village leading to pollution of water sources	Yes	Non negotiable
b	100% coverage of toilets	Yes	Non negotiable
c	100% school sanitation (separate toilets for boys and girls)	Yes	Non negotiable
d	Water supply available for toilets	Yes	Non negotiable
e	Presence of well maintained drainage system (drain should not be clogged; water should not stagnate; should not pollute water sources)	Yes	Non negotiable
f	Grey water treated and reused	Yes	Desirable
g	Presence of solid waste management systems (like composts etc; solid waste not found littered in the village; not clogging drains)	Yes	Non negotiable
h	High in hygiene behaviour (Every one washes hand after defecation; handles drinking water with clean hands)	Yes	Non negotiable



III. GOVERNANCE/INSTITUTIONS

	Parameters	IDWM target	Remarks
a	Balanced representation of women and vulnerable groups in the Village water and Sanitation Committee-VWSC (indicate the numbers)	Yes	Non negotiable
b	Is the selected democratically? Re-organization of the VWSC at regular/stipulated interval? (indicate the term)	Yes	Non negotiable
	Good working relation with Gram Panchayat and convergence of IDWM and GP funds	Yes	Desirable
d	Systems in place to inform public on the finances (social audits, notices, wall painting)	Yes	Non negotiable
e	Community systems in place to prevent over extraction/use of water sources	Yes	Desirable
f	Community systems in place to protect sources-- sanction on open defecation in the catchment of source; ban on disposing waste near a water body	Yes	Desirable
g	Community surveys to inspect the sanitary condition of water sources, quality of water sources and to check groundwater levels	Yes	Non negotiable



Thank You