WELCOME TO ALL PARTICIPANTS



Rain Water Harvesting And

Ground Water Management

An Effective Tool for Bringing Water Abundance to All...

A PRESENTATION BY

SANDEEP A ADHYAPAK B.E. FIE

CHARTERED ENGINEER-WATERPTENURE

MOB:9821340043/9821244882

CMD-WATER FIELD TECHNOLOGIES PVT LTD

PRESIDENT:WATER FIELD RESEARCH FOUNDATION (NPO)







ABOUT US

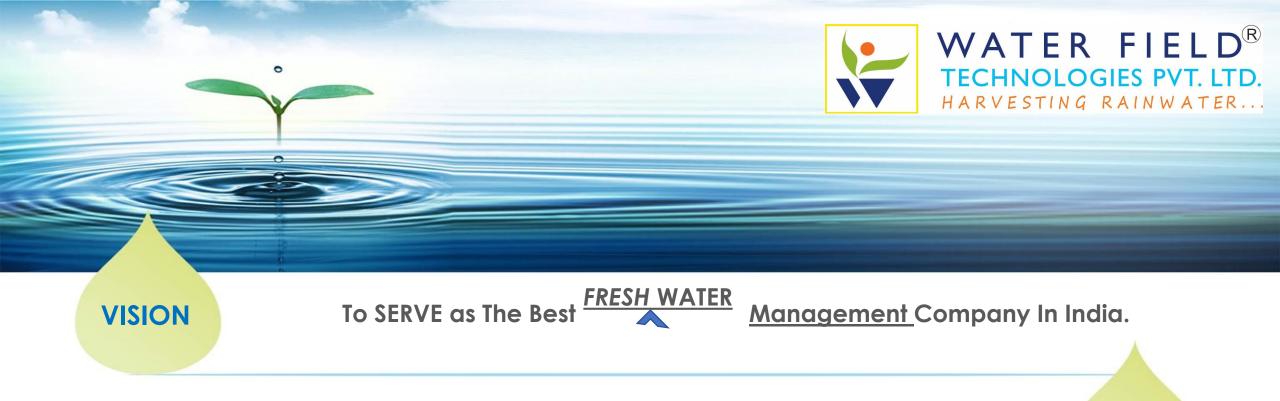
Water Field Technologies was established in the year 2005
Incorporated as "Water Field Technologies Pvt. Ltd" (WFTPL) w.e.f. 24 th April 2012.
WFTPL is an ISO (9001: 2015) Certified Company

Offering **Effective Solutions on Total Water Management** through Rain Water Harvesting & Ground Water management.

We provide Customized and Modular Designs of Rain Water Harvesting (RWH) Systems Suitable for Your Bungalow, Residential Building and Housing Complex, Industry, Institution & CSR Projects.

Focused working on FRESH WATER MANAGEMENT

Successfully Completed Over 2000 Projects across INDIABringing Water Abundance To ALL



Enabling People and Organizations to become self-sufficient of their water requirements by offering an effective solution on total Water Management.

MISSION

B.H.A.G.

Serving Over 10000 Customers Successfully By Year 2025



Bringing Water Abundance To ALL







WATER

EVERY DROP COUNTS...

Water Field Technologies was established in the year 2005 and it was then Reconstituted Incorporated as a private Limited Company in the name and style "Water Field Technologies Pvt. Ltd" w.e.f. 24 th April 2012

Water Field Research Foundation



WFRF is a Not for profit making organization (registered under Section-8 Act) to promote Research & development in the field of environmental conservation.



















































NATION INDIA 10 + STATES 100 + SCHOOLS

1000 + URBAN PROJECTS

10000 +
PARTICIPANTS
TRAINED

100000 + BENEFICIARIES

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10 + STATES 100 + SCHOOLS

1000 + URBAN PROJECTS

10000 +
PARTICIPANTS
TRAINED

100000 + BENEFICIARIES



Our Clients



















































E FV ICE

Geophysical and Tomography TRADING
Survey/Hydrogeological Studies

Consultancy For RWH (PMC)

GPS and Drone Survey for Water
Supply and Watershed Management

Field Testing

Water Sample Testing and Analysis

Water Audits and NOC from CGWB

PROJECTS Trainings/Workshops on Rain Water Harvesting and Groundwater Management

Supply of Water Management Products (B2C Trading)

Dealerships (B2B)

Turkey Projects (EPC Contracts)

AMC of RWH Systems

Water Purification Systems



Social, Cultural & Financial Future of the country lies with best WATER MANAGERS

WATER FIELD®
TECHNOLOGIES PVT. LTD.

HARVESTING RAINWATER ...

Water is an Elixir of Life.



Fast Growing urbanization and Increase in population has raised the Demand of water drastically.

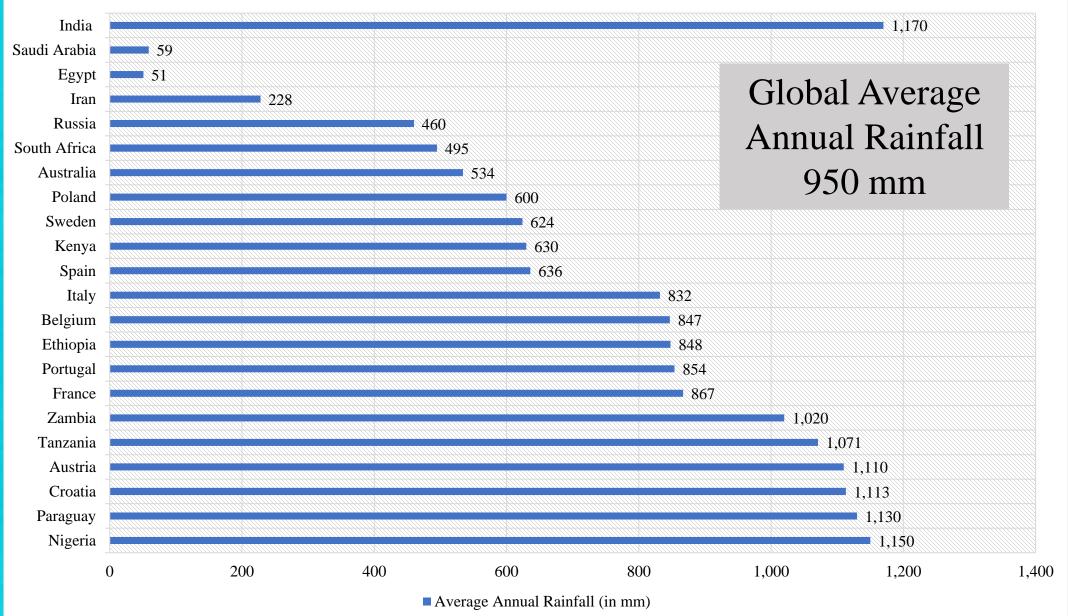
Indiscriminate use of water in Industry is causing depletion in Ground Water table all across.

Jal Shakti Ministry has announced National Water Mission to 'Catch the Rain Where It Falls, When It Falls'.

The Rain being prime source of the Water on the earth,
Rainwater Harvesting proves to be the most effective and
sustainable solutions to manage the water needs
independently throughout the year.
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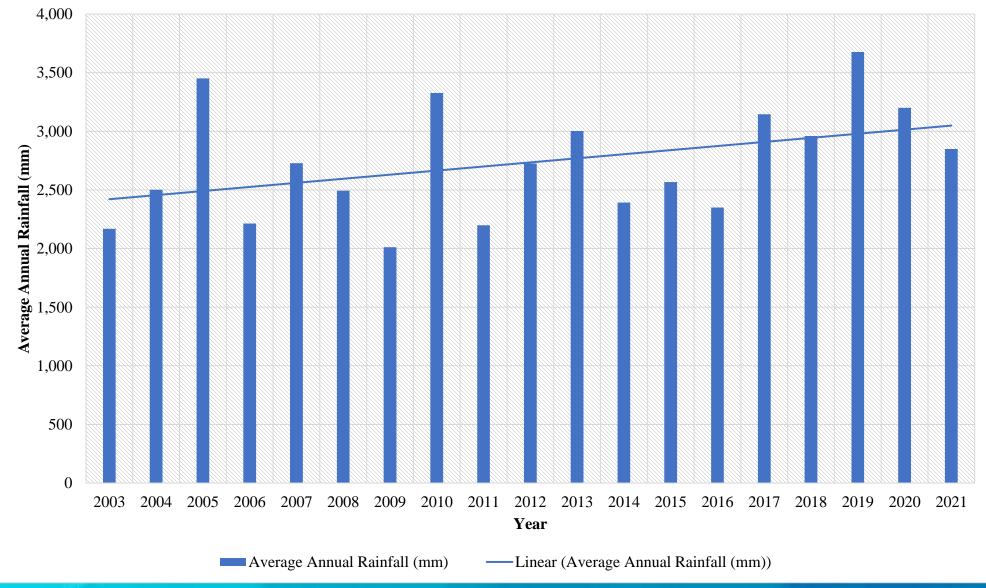






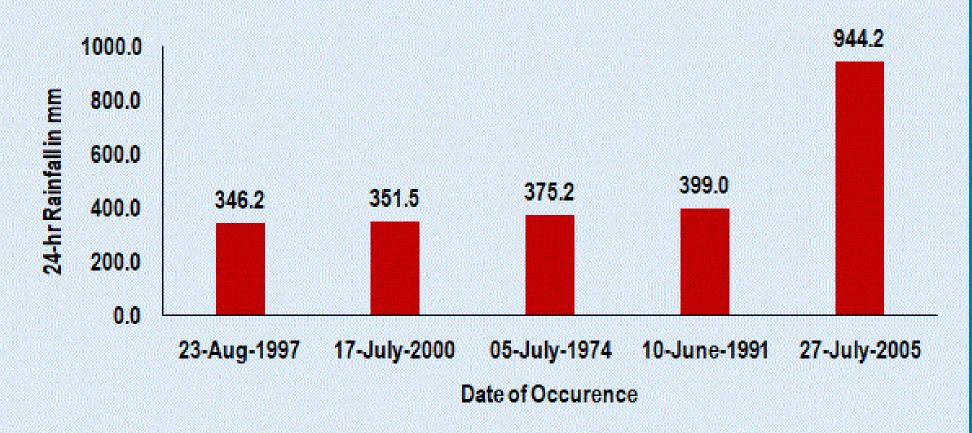












Top Five Extreme events over Santacruz in the monsoon months from 1973 to 2022

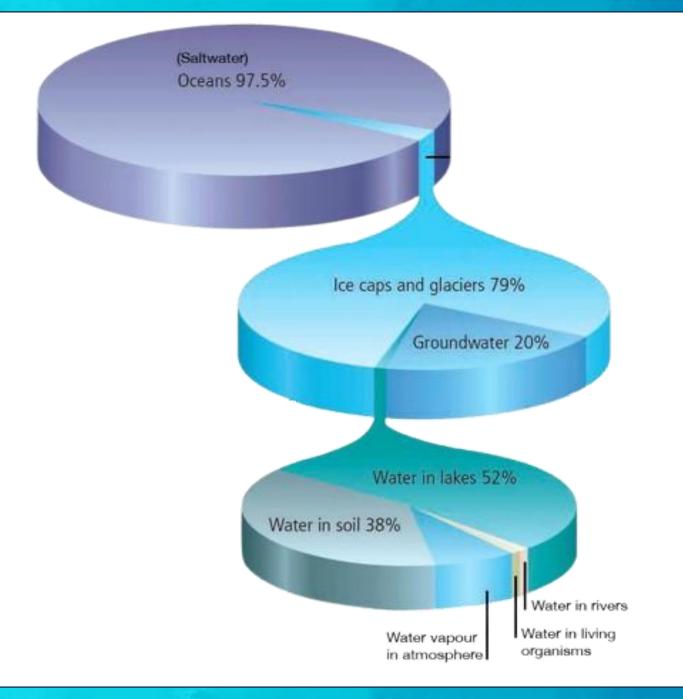


MONTHLY TOTAL RAINFALL OVER SANTACRUZ IN JULY (1991 - 2022)











HOW MUCH WATER IS AVAILABLE FOR USE?



Breakup of 135 lpcd (Urban Domestic Water Use) Usage

Category Water Use	(liters/day)	% of Total	Typical Application
Flushing Toilets	40	~30%	Flush tanks, dual/standard flush systems
Bathing	30	~22%	Showers, buckets, etc.
Washing Clothes	20	~15%	Manual or washing machines
Washing Utensils	10	~7%	Kitchen sink cleaning
Drinking & Cooking	5	~4%	Safe potable water use
Handwashing, Brushing, etc.	15	~11%	Personal Hygiene
House Cleaning	10	~7%	Mopping, outdoor wash downs
Gardening	5	~4%	For homes with small gardens

IMPORTANCES OF RWH





A conscious effort to collect, store and utilize the rainwater to fulfil water needs for domestic, industrial and agricultural purpose is truly imperative.

Water is most valuable natural resource and something that we take it for granted.

RAIN.... PRIME SOURCE WATER ON EARTH

Rainwater being prime source of all water Freely available on the Earth, we have to become more and more responsive towards catching every drop of Rainwater by giving importance to Rainwater Harvesting to our endurance and its effectiveness at all times.

CURRENT NATIONAL WATER SCENARIO



Over the last few decades, India has witnessed a rapid increase in the urban population. It is estimated that 50% of the population in India will be in urban centers by the year 2050.

The growing population invariably exerts tremendous pressure on the existing natural resources.

In fact, a glance at the statistics provided in the 'Global Environment Outlook', United Nations Environment Program, 1996 Report reflects on the grim future of India in term of its natural resources.

Urban Development Notice



As per the Urban Development Notice issued on 10 March 2005

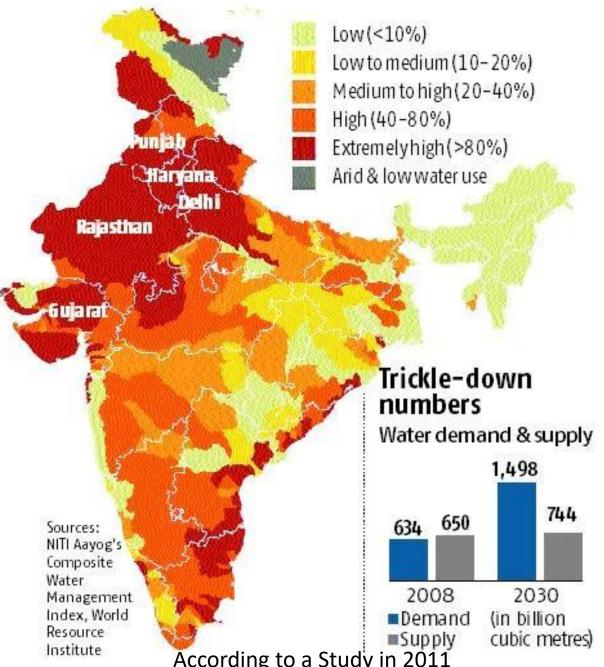
Government has decided to take effective measures for collection of rainwater from rooftops, paved/unpaved surfaces, etc. and to use it either for recharging ground water or storing it in storage tanks. For this, it has been further decided that hence forth no building permissions be granted unless provision is made for Rainwater harvesting scheme. It is therefore, necessary to include rainwater harvesting scheme provision in development control rules and for that purpose, direction to all the planning authorities, development authorities/special planning authorities (excluding MCGM) are given under section 37.

All planning authorities/development authorities should initiate a modification proposal under section 37 of the Maharashtra Regional And Town Planning Act, 1996

Of the existing development control regulations to incorporate special provisions for installation of Rainwater Harvesting schemes and submit the same to government for approval.

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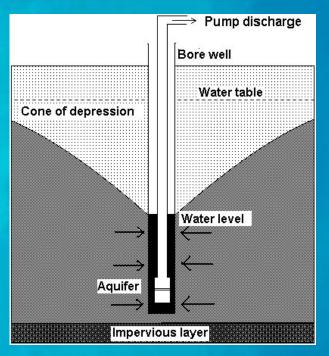
WATER-STRESSED AREAS





logies pvt. ltd.









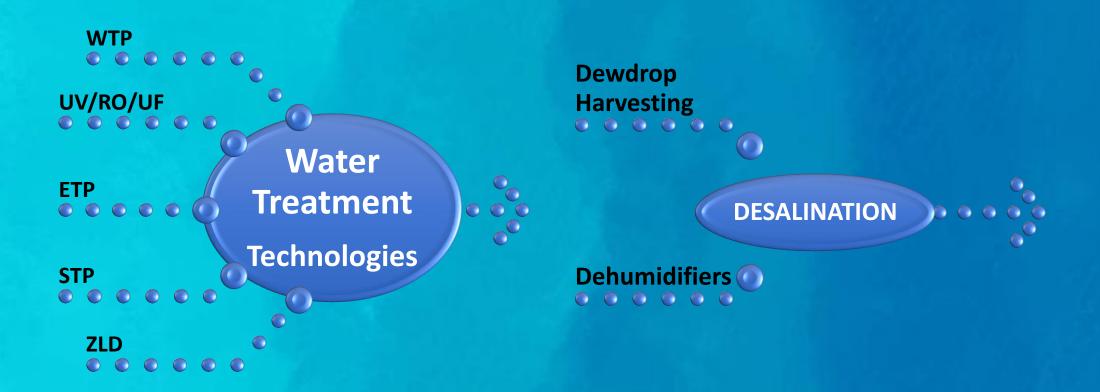








ADVANCE TECHNOLOGIES



ASK YOURSELF Which one will you consume first ??





A

OR

B



A-Treated Sewage Water

B-Rain Water







Privatization of Water





Traders To Rulers



Why RWH?



Reducing Dependency

 RWH provides an easy, Low Cost Alternative Water Source, easing reliance on Tankers.

Enhancing Groundwater Recharge

 Recharge Wells and Borewells to replenish aquifers, stabilizing Water Supply

Mitigating Climate Change

 Sustainable Water use lowers Saves Energy bills and Carbon Footprints,

Preventing Floods and Water Security

 RWH Regulates Water Flow, Reducing Risks of Floods and Droughts

Sustainable Agriculture & Industry

 Promotes Water-Efficient systems for urban, rural, Irrigation and Industrial water Conservation practices

Community Awareness

 Educating People on RWH Ensures longterm water security and Self Reliance ..AVOID RISK OF WATER WARS







NEW Approach R³ 3R





What do We Do?



Water





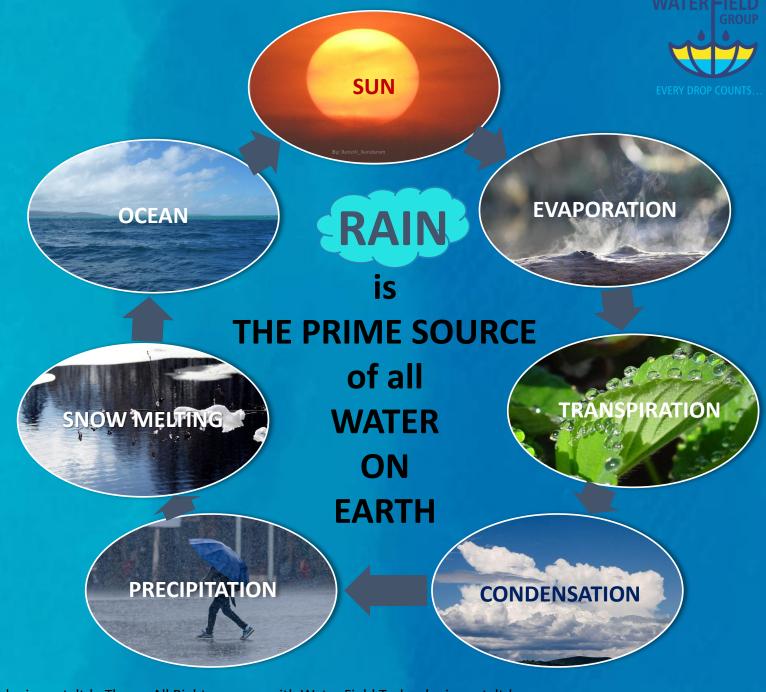




आकाशात् पतितं तोयं यथा गच्छति सागरम् । सर्वदेवनमस्कारः केशवं प्रति गच्छति ॥



NATURAL WATER CYCLE



WHAT IS RWH?





AN EFFECTIVE WATER MANAGEMENT SYSTEM DESIGNED TO FULFILL SECONDARY WATER NEEDS BY COLLECTING RAINWATER WHENEVER AND WHEREVER IT FALLS **UTILISING IT DURING MONSOON** AND RECHARGING THE SURPLUS TO MAKE GROUNDWATER SOURCES SUSTAINABLE THROUGHOUT THE YEAR.











































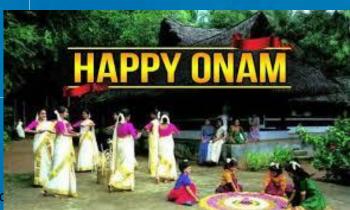














WHERE











Commercial Buildings/Malls

Hospitals



Bungalows

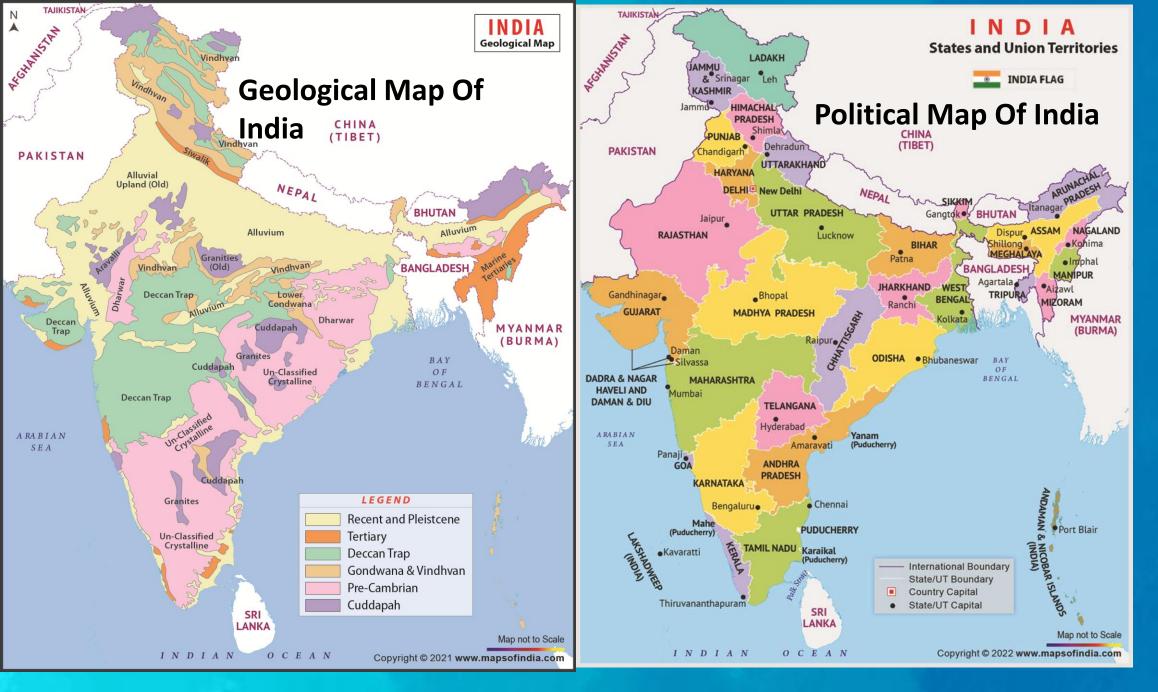










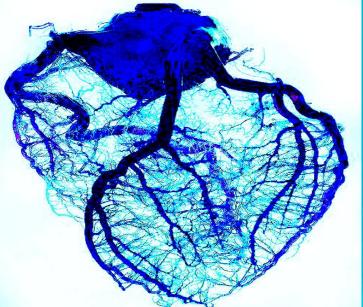




ANALOGY, HUMAN BODY & EARTH



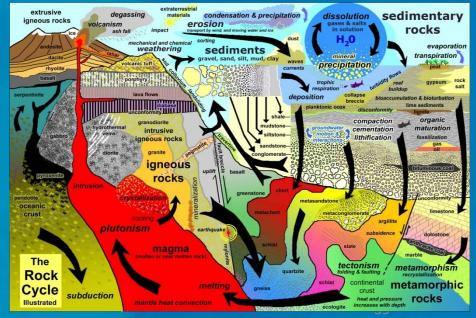








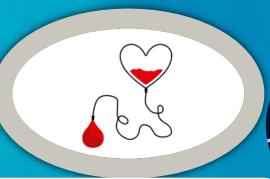




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SIMILAR ACTION CAN PRODUCE DIFFERENT RESULTS.... AN EXPERT CAN MAKE IT....POSSIBLE











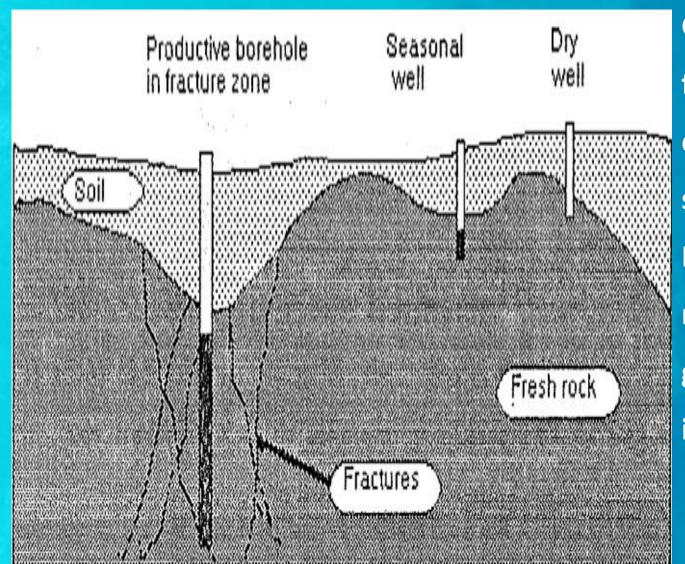






NEED FOR GEOPHYSICAL SURVEY





Good drinking water can be obtained from fracture zones in hard rock .But drilling without site investigation(survey) seldom yields water in usable quantities. **Effective water development programs** include conducted carefully must geophysical geological and investigations(survey).

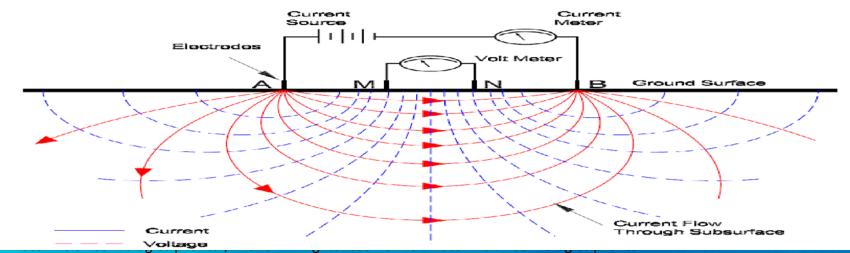
GEOPHYSICAL SURVEY CONDUCTING GEOPHYSICAL SURVEY TO IDENTIFY FAVORABLE LOCATIONS FOR BORE WELLS TO BE DRILLED UNDER RAINWATER HARVESTING PROJECT.

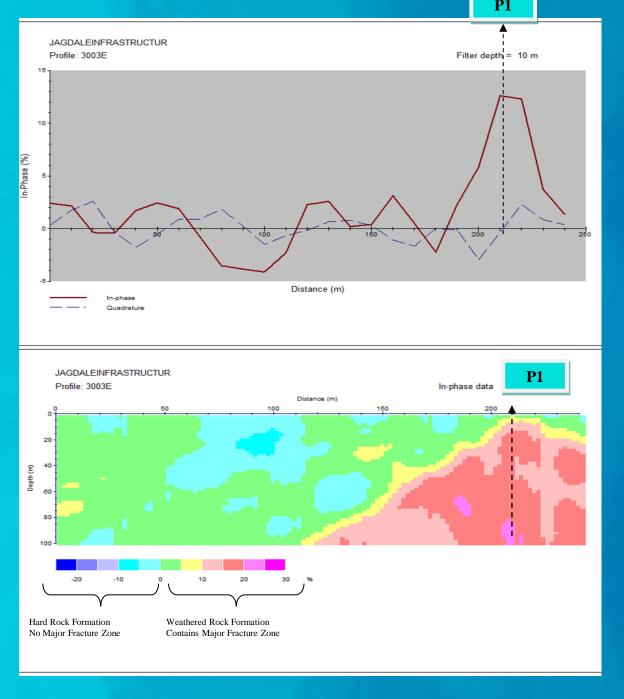










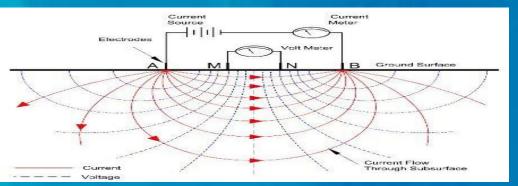




VERTICAL ELECTRIC SOUNDING (VES) OR RESISTIVITY SURVEY AQUAMETER CRM 500







Resistivity technique measures the earth's resistivity by driving a DC current into the ground and measuring the resulting potentials (voltages) created in the earth.

From the data the electric properties of the earth (geoelectric section) are derived and the geologic properties of the earth are interpreted.

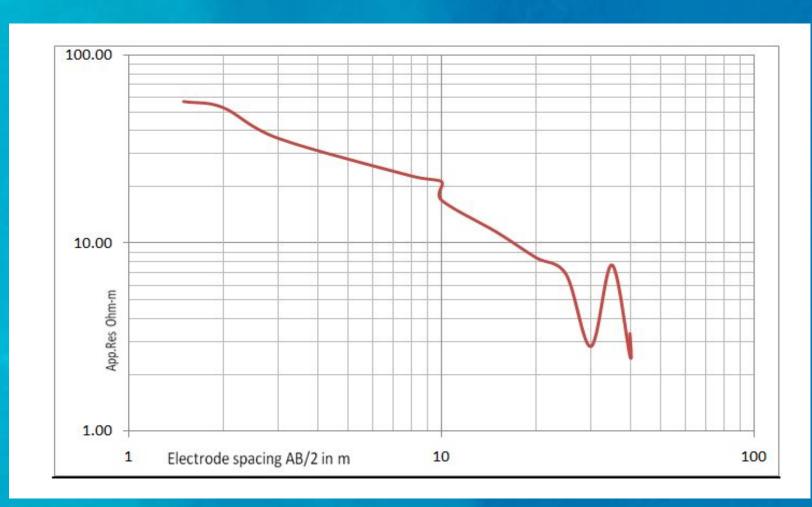
Measurement of resistivity, generally measures water saturation(water table)

and connectivity of pore spaces



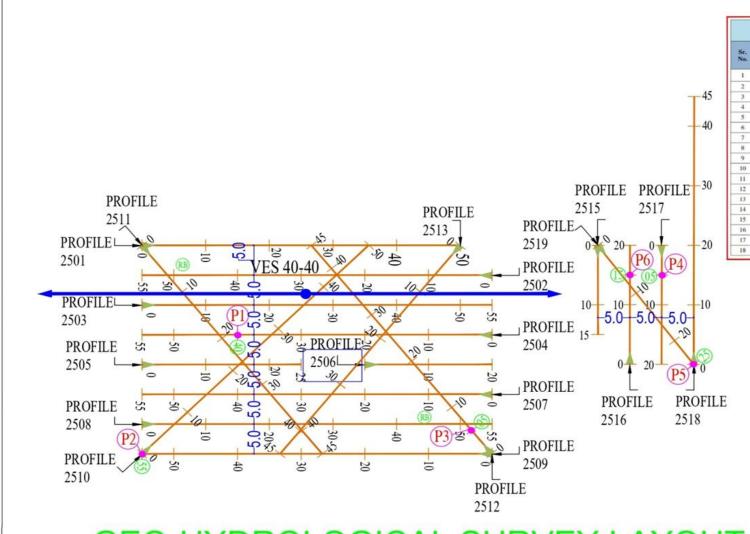
VES-SURVEY DATA

VES 01			
AB/2	App Res		
(m)	(ohm-m)		
1.5	56.89		
2	52.92		
3	36.30		
8	22.84		
10	21.32		
10	16.97		
15	11.46		
20	8.40		
25	6.83		
30	2.82		
35	7.67		
40	2.51		
40	3.30		



PROFILING DATA





			RAJESH SAWANT'S SITE AMBET					
Sr. No.	Profile No.	Total Profile Length (in m)	Interval (m)	Point Name	From Zero(in m)	Preference	Latitude	Longitude
1	2501	50	05					100
2	2502	55	05		1/4		2	
3	2503	55	05		14	-	-	5.8
4	2504	55	0.5	P1	40	4	18° 4'35.97"N	73°16'56.56"E
5	2505	25	0.5		-	14	-	
6	2506	20	05				-	
7	2507	55	05		- 2	14	9	
8	2508	55	0.5				-	
9	2509	55	05	P2	55	5	18° 4'36.40"N	73°16'55.86'T
10	2510	50	05		12	14	-	
11	2511	45	05		-		-	-
12	2512	45	0.5	P3	5	1	18° 4'34.73"N	73°16'56.02"E
13	2513	45	0.5		- 2		-	
14	2515	15	05	200	12	-	+	
15	2516	20	0.5	P6	15	2		
16	2517	20	05	P4	5	3	18° 4'34.26"N	73°16'57.14'E
17	2518	45	0.5		. 2		-	
18	2519	25	05	P5	25	6	18° 4'34.04"N	73*16'56,51"

LEGENDS DESCRIPTION				
Sr. No.	DESCRIPTION	SYMBOLS		
1	PROFILE	—		
2	BOREWELL POINTS	P		
3	DISTANCE FROM ZERO	00		
4	EXISTING BOREWELL	RB		
5	VES LINE			

GEO-HYDROLOGICAL SURVEY LAYOUT





- FACTORS DETERMINING TYPE OR SYSTEM OF RAINWATER HARVESTING
 - Rainfall Quantity
 - No Of Rainy Days
 - Intensity of Rainfall
 - Catchment Area
 - Storage Capacity

- STORAGE OF WATER IN STORAGE TANK
 - Design of system components (roof, guttering and first flush device, tank)
 - Site assessment
 - Estimating the size of required system (V= t * n * q)
 - Management and Maintenance

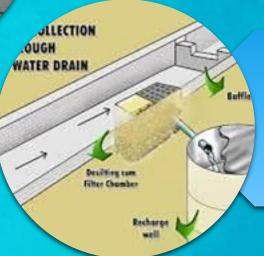


METHODS OF RWH



Roof-Top RWH

- Collection of Rainwater from roof top area (using down take Pipes)
- Primary filtration is sufficient to use rain water for secondary purpose and surplus to groundwater recharge



Surface Run-off RWH

- Collection of Rainwater from large surface areas (using storm water channels)
- Primary and secondary filtration required to use rain water for secondary purpose and surplus to groundwater recharge











COMPONENTS OF RWH









₂ C CHANNELISATION

PRIMARY FILTRATION

4 S STORAGE

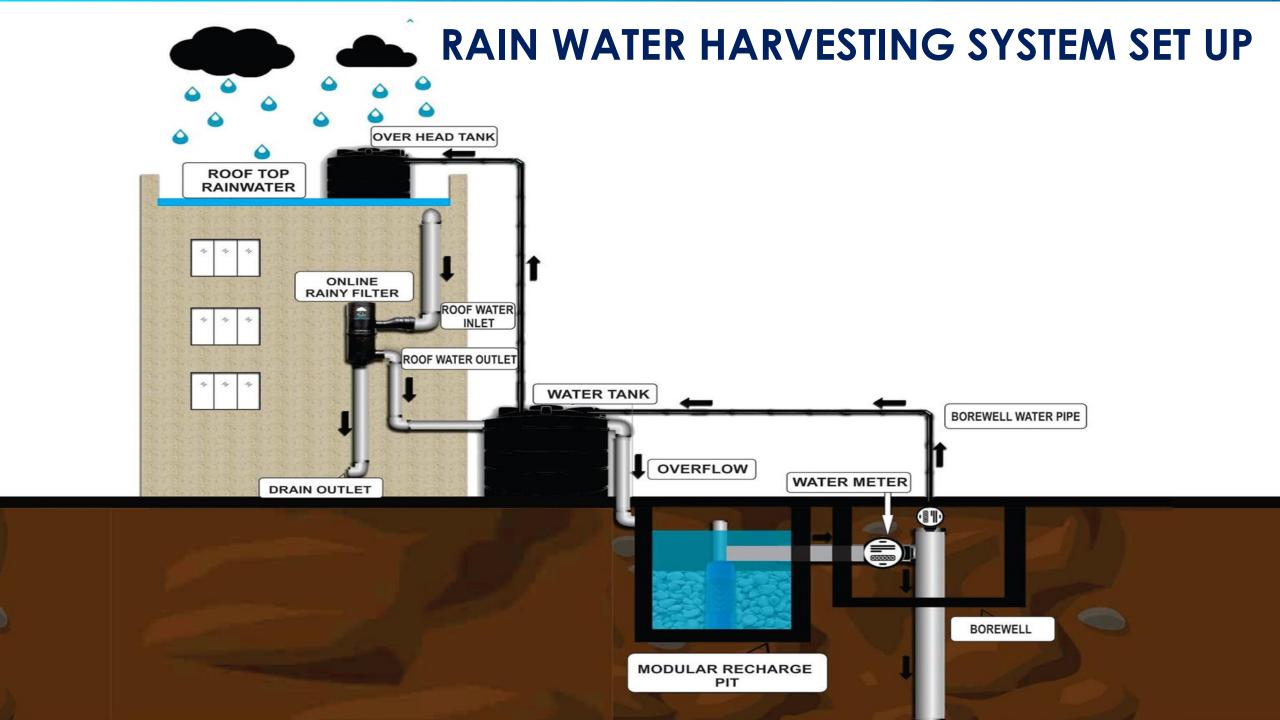
5 D DISTRIBUTION

6 SF SECONDARY FILTRATION

7 RECHARGING



MODEL FOR RWH IN MMR





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BENEFITS OF RWH



- DECENTRALISED WATER SUPPLY SYSTEM BRINGING SELF SUFFICIENCY FOR WATER
- ***LOW MAINTENANCE COSTS**
- ***IMPROVES GROUND WATER LEVELS AND QUALITY.**
- **ENVIORNMENT FRIENDLY.**
- **MITIGATES THE EFFECTS OF DROUGHT.**
- **IT IS ONE OF THE FLOOD CONTROL MEASURE**
- * REDUCES RUNOFF REDUCES SOIL EROSION.
- * REDUCES CHANCES OF SALINE WATER INGRESS IN COASTAL PART
- *** HELPS IN REDUCING WATER AND ELECTRICITY BILLS.**



आमदार स्थानिक विकास कार्यक्रमांतर्गत नागरी स्थानिक स्वराज्य संस्थांच्या क्षेत्रातील व या क्षेत्राला लागून असलेल्या ग्रामीण परिसरातील सहकारी गृहनिर्माण संस्थांच्या जागेवर पायाभूत सुविधांची कामे अनुझेय करण्याबाबत.

महाराष्ट्र शासन नियोजन विभाग

शासन निर्णय क्रमांकः स्थाविका – ०४२२/ प्र.क्र.६२ (१) /का.१४८२ मंत्रालय, मुंबई – ४०० ०३२ दिनांक :– २२ जुन, २०२२

संवर्भ:- नियोजन विभाग, शासन निर्णय क्रमांकः स्थाविका-०६१६/ प्र.क.९६ /का.१४८२, दिनांक १२ जुलै, २०१६

प्रस्तावना :-

आमदार स्थानिक विकास कार्यक्रमांतर्गत होणाऱ्या कामांच्या व्याप्ती आणि कार्यपध्दती यामध्ये अध्ययन करून अधिक गतिमान पध्दतीने कामे होण्याकिरता अभ्यास करून या कार्यक्रमाच्या मार्गदर्शक तत्वांबाबत अंतिम निर्णय घेण्यासाठी गठित करण्यात आलेल्या मा. मंत्रिमंडळ उपसमितीने घेतलेल्या निर्णयानुसार आमदार स्थानिक विकास कार्यक्रमांतर्गत नियोजन विभाग, शासन निर्णय क्र.स्थाविका-०६१६/प्र.क्र.१६/का.१४८२, दि. १२ जुलै, २०१६ अच्चये सर्वसमावेशक मार्गदर्शक तत्वे निश्चित करण्यात आली आहेत. तथापि, शहरी/नागरी भागाचे प्रतिनिधित्व करणाऱ्या काही विधीमंडळ सदस्यांनी, ग्रामीण भागाच्या तुलनेत शहरी/नागरी भागात कामे सुचविण्यास/कामे करण्यास आमदार स्थानिक विकास कार्यक्रमाच्या विद्यमान मार्गदर्शक सुचनांमुळे मर्यादा येत असल्याचे शासनाच्या निदर्शनास आणून दिले. त्याचप्रमाणे, महानगरपालिका व नगरपालिका आणि नगरपंचायत क्षेत्रातील तसेच या नागरी क्षेत्राला लागून असलेल्या ग्रामीण परिसरातील सहकारी गृहनिर्माण संस्थांच्या जागेवर निवडक पायाभृत वा अन्य सुविधांची कामे अनुझेय करण्याची शासनास विनंती केली.

२. राज्यातील ग्रामीण भागातील जनता मोठ्या प्रमाणावर उपजिविकेच्या साधनांसाठी शहरांकडे वळत असल्याने होत असलेल्या वाढत्या नागरीकरणामुळे शहरी भागात तसेच शहरी भागालगतच्या ग्रामीण भागात अस्तित्वात असलेल्या सहकारी गृहनिर्माण संस्थांना आवश्यक त्या सोयीसुविधा पुरविण्यासाठी नागरी स्थानिक स्वराज्य संस्थांवर मोठा ताण पडतो. तेव्हा, आमदार स्थानिक विकास कार्यक्रमाच्या विद्यमान मार्गदर्शक सूचनांमध्ये सुधारणा/बदल करून महानगरपालिका व नगरपालिका आणि नगरपंचायती तसेच या क्षेत्रास लागून असलेल्या ग्रामीण परिसरामधील सहकारी गृहनिर्माण संस्था यांचे सहभागाने कालबद्ध तन्हेने "शाश्वत विकास ध्येय (SDG)" अंतर्गत निश्चित केलेली ध्येये व लक्ष्ये साध्य करण्याकरीता विविध विभागांची धोरणे विचारात घेऊन आमदार निधीचा विनियोग कशा प्रकार करता येईल व या अनुसंगाने आमदार स्थानिक विकास कार्यक्रमांतर्गत कोणत्या प्रकारची पायाभूत व अन्य सुविधांची कामे अनुझेय करता येतील, याबाबत शिफारस करण्यासाठी शासनाने उपसचिव, नियोजन विभाग यांच्या अध्यक्षतेखाली समिती गठित केली होती. सदर समितीने सादर केलेल्या

शासन निर्णय क्रमांकः **स्थाविका – ०४२२/ प्र.क.६२ (१) /का.१४८२**

- काम मंजूर करण्यापुर्वी संबंधित सहकारी गृहनिर्माण संस्थेच्या किमान २५% वाट्याची रक्कम त्यांच्या बँक खात्यात उपलब्ध असल्याचे तसेच सदर रक्कम प्रस्तूत प्रयोजनार्थ खर्च करण्यास संस्था तयार असल्याचे संस्थेच्या सक्षम पदाधिकाऱ्यांनी (संस्थेचे अध्यक्ष, सचिव व खजिनदार) प्रमाणित करणे आवश्यक राहील. प्रमाणपत्रासोबत संस्थेच्या बँक पासबुकची प्रत सोबत जोडलेली असावी.
- सहकारी गृहनिर्माण संस्थांचे मागील तीन वर्षांचे वैधानिक लेखापरीक्षण झालेले असावे व सदर संस्थेस किमान "ब+" वर्ग दर्जा प्राप्त असावा.
- सहकारी गृहनिर्माण संस्थेच्या इमारतीला भोगवटा प्रमाणपत्र (Occupancy Certificate) प्राप्त असावे.
- सहकारी गृहनिर्माण संस्थेची जागा / इमारतीचा भाग, संबंधित स्थानिक स्वराज्य संस्थेन अनिधकृत / अतिक्रमित ठरविलेला नसावा. तसेच सदर इमारत किंवा इमारतींचा समूह पुनर्विकाससाठी प्रस्तावित नसावेत.
- संस्थेमध्ये काम करताना संस्थेच्या वार्षिक किंवा विशेष सर्वसाधारण सभेची मान्यता असल्याबाबतचा ठराव सादर करणे आवश्यक राहील.
- ज्या आर्थिक वर्षात सहकारी संस्थेस अनुदान वितरित होईल त्या आर्थिक वर्षाच्या ऑडीट रिपोर्टमध्ये सदर प्रकल्पासाठी एकूण निधीच्या विनियोगाबाबत विशेष नोंद घेण्यात यावी.
- ३. आमदार स्थानिक विकास कार्यक्रमांतर्गत नागरी भागातील सहकारी गृहनिर्माण संस्थेच्या जागेवर/आवारात कामे मंजूर करण्यापुर्वी वरील मानके/निकषांची पूर्तता करणारी प्रमाणित कागदपत्रे संस्थेकडून प्राप्त करुन घेण्यात यावीत.
- ४. आमदार स्थानिक विकास कार्यक्रमांतर्गत संदर्भाधीन क्र. १ येथील दि. १२ जुलै, २०१६ च्या शासन निर्णयातील परि. ३.५ अंतर्गत असलेल्या विद्यमान तरतूदी व्यतिरिक्त खालील ९ प्रकारची कामे सहकारी गृहनिर्माण संस्थांच्या जागेवर अनुझेय करण्यात येत आहेत, या तरतूदीचा समावेश करण्यात येत आहे. त्यानुसार आमदार स्थानिक विकास कार्यक्रमांतर्गत नागरी भागातील सहकारी गृहनिर्माण संस्थेच्या जागेवर/आवारात खालीलप्रमाणे कामे अनुझेय असतील.

अ.क.	सहकारी गृहनिर्माण संस्थांकरिता अनुज्ञेय करावयाची प्रस्तावित कामे	संबंधित शाश्वत विकास घ्येय
٩	रेन वॉटर हार्वेस्टींग	* सर्वांसाठी पाणी व स्वच्छता यांची उपलब्धता व शाश्वत व्यवस्थापन याची सुनिश्चिती करणे.

(P) / का.9822

ऱ्यावर प्रक्रिया करणे. ल्प संबंधित गृहनिर्माण ॥वे. भारणी करणे	 सर्वांसाठी पाणी व स्वच्छता यांची उपलब्धता व शाश्वत व्यवस्थापन याची सुनिश्चिती करणे.
या मालकीच्या परिसरात वित्रणा बसविणेसाठी	 शहरे आणि मानवीय वसाहती समावेशक, सुरक्षित स्थितीसापेक्ष आणि शाश्वत बनविणे
व्या मालकीच्या परिसरात डी सोलर सिस्टीम	 सर्वांसाठी परवडण्याजोगी, खात्रीची शाश्वत व आधुनिक उर्जा यासाठीच्या प्रवेशाची
) सौर विद्युत संच व	सुनिश्चिती करणे * शहरे आणि मानवीय वसाहती समावेशक, सुरक्षित
गरीत संयंत्र आस्थापना	स्थितीसापेक्ष आणि शाश्वत बनविणे
बसविणे	
गलकीच्या मोकळ्या	* सर्वांसाठी परवडण्याजोगी,
सेंटर तयार करणे.	खात्रीची शाश्वत व आधुनिक उर्जा यासाठीच्या प्रवेशाची सुनिश्चिती करणे
ातील खालील	* स्थितीस्थापक पायाभूत सुविध
यांचे बांधकाम करणे	तयार करणे सर्वसमावेशक
न रस्त्यांचे डांबरीकरण.	आणि शाश्वत औद्योगिकीकरण
o Synthetics चा वापर	चालना देणे व नवनवीन कल्पना जोपासणे
चे बांधकाम करणे.	
बराचा वापर (Polymer	* शहरे आणि मानवीय वसाहती
dified) करणे तसेच	समावेशक, सुरक्षित
पर तसेच पर्यावरणपुरक गर करणे.	स्थितीसापेक्ष आणि शाश्वत
१२ करण. चा वापर, नारळाच्या	बनविणे
गवारातील पदपथावर बसविणे	

पुष्ठ ६ पैकी ४



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