

URBAN COMMUNITY RAINWATER HARVESTING

**4 Way Partnership
Holds The Key**



WATER SITUATION IN DELHI

- Total water requirement 900 MGD
- DJB supply 630 MGD
(including 17% of groundwater supply)
- Shortfall 270 MGD (30%)
- Expected demand by 2011 & 2021 1072 MGD, 1389 MGD
- Expected gap by 2021 after
for water from all sources 40%
- Groundwater Development (overall) 170 %

THE SCENE IN DELHI

*45% OF DELHI'S WATER NEEDS ARE FULFILLED BY
GROUNDWATER*

- Govt. responsible for water supply & water is cheap
- Community work done mainly by volunteers usually elderly
- Technical know-how is not easily available. Also site specific modeling required.
- No source of funds – Govt. funds too less and uncertain, community funds difficult.

OUR CONTENTION

- 1. Having Adequate Groundwater Reserves Is The Surest Route To Creating Water Security**
- 2. Hence adoption of Rainwater Harvesting should be widespread**
- 3. P-4 Partnership model is the best way to mainstream adoption of rainwater harvesting**

GROUNDWATER FOR WATER SECURITY – WHY?



- Easiest / cheapest to access
- Community in catchment area can monitor its levels and usage.
- Least treatment required
- Most dependable

**IT IS THE WATER IN
THE GROUND BENEATH OUR FEET.**

STATISTICS

906 BILLION LITRES

(approx 165 lpcd)

OF WATER

Rains in Delhi

Every year

Year after year....

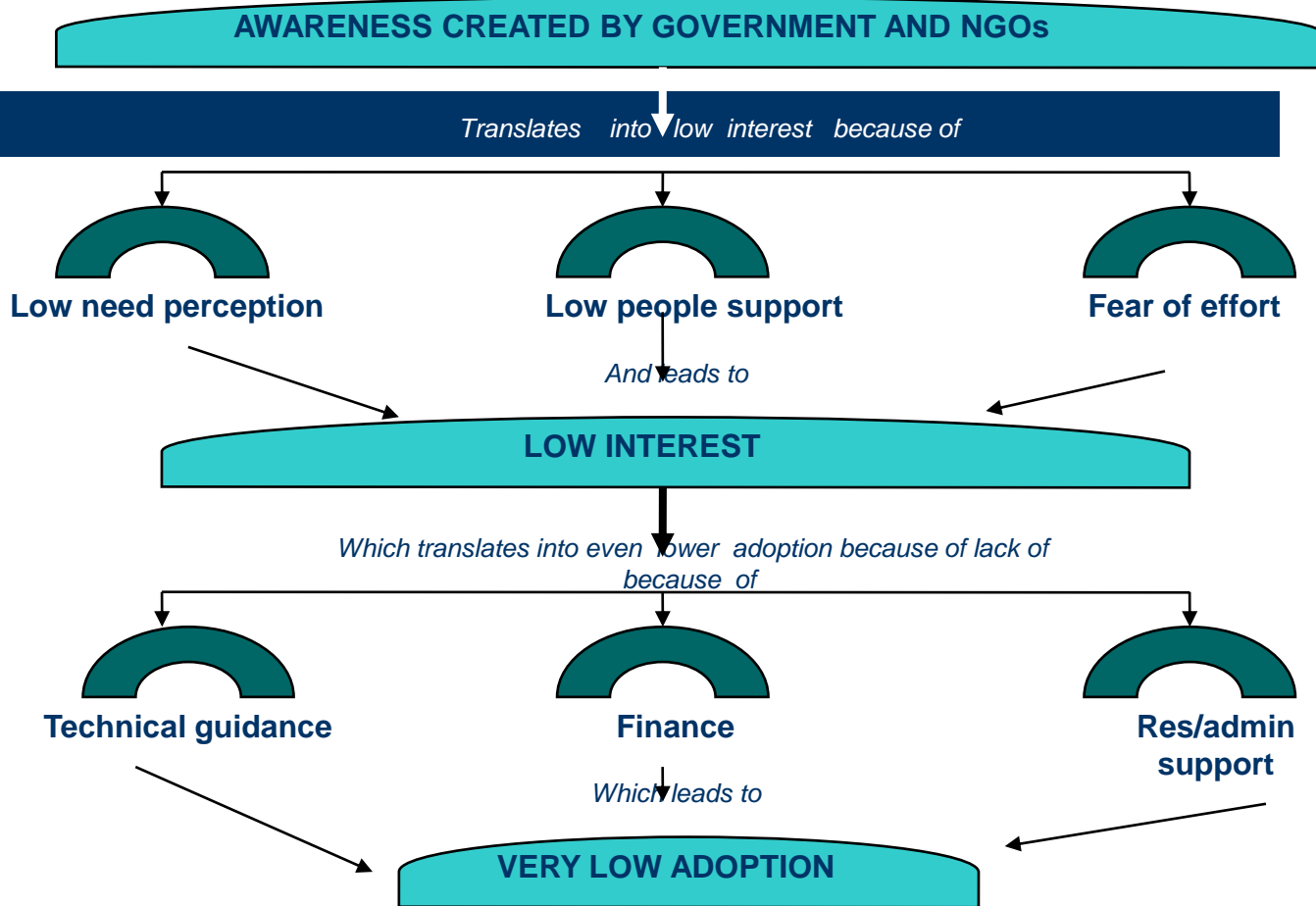
If we could catch it and store it

Do we really need to destroy eco-systems and displace thousands to flush water down our toilets?

BARRIERS TO ADOPTION

Of Rainwater Harvesting

THE BARRIERS



LOW PEOPLE SUPPORT



This is govt's duty

What's in it for me?

How to collect money

PERCEPTIONS AND MYTHS

Too little rain in Delhi

Just make a soak pit or divert water to a park

It is not possible in rocky areas

Can harm building foundations

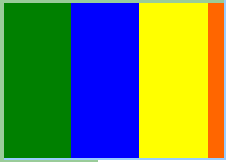
We don't need it

It's the Government's job

Just make large reservoirs / dam up the nullahs – that's enough

If we dig tubewell deeper, we'll get water

F O R C E



FINANCE

S



Low Govt funds, diff to get



Expensive especially
in urban areas
because of space,
safety and low water
table



Identifying other
sources

PROCESS HURDLES



Getting designs made



Monitoring work



Other permissions

Last hurdle - Maintenance

- Everyone's baby no-one's baby syndrome
- Specialised service providers required.
- Can be dangerous
- Annual costs more than computer AMC
- Requires continuous monitoring
- Different maintenance requirement for different structures.

OVERCOMING THE BARRIERS

4 Way Partnership



CREATE AN ASSEMBLY LINE

- Remove all barriers
- Make it easy for people to adopt rainwater harvesting.

4-WAY PARTNERSHIP

4 WAY PARTNERSHIP

Positive minded atmosphere
of co-operation

EXPERTS
Guiding light

**Community
Leaders**

In driving seat

Funding partners

Fuel to take to goal

GOVERNMENT

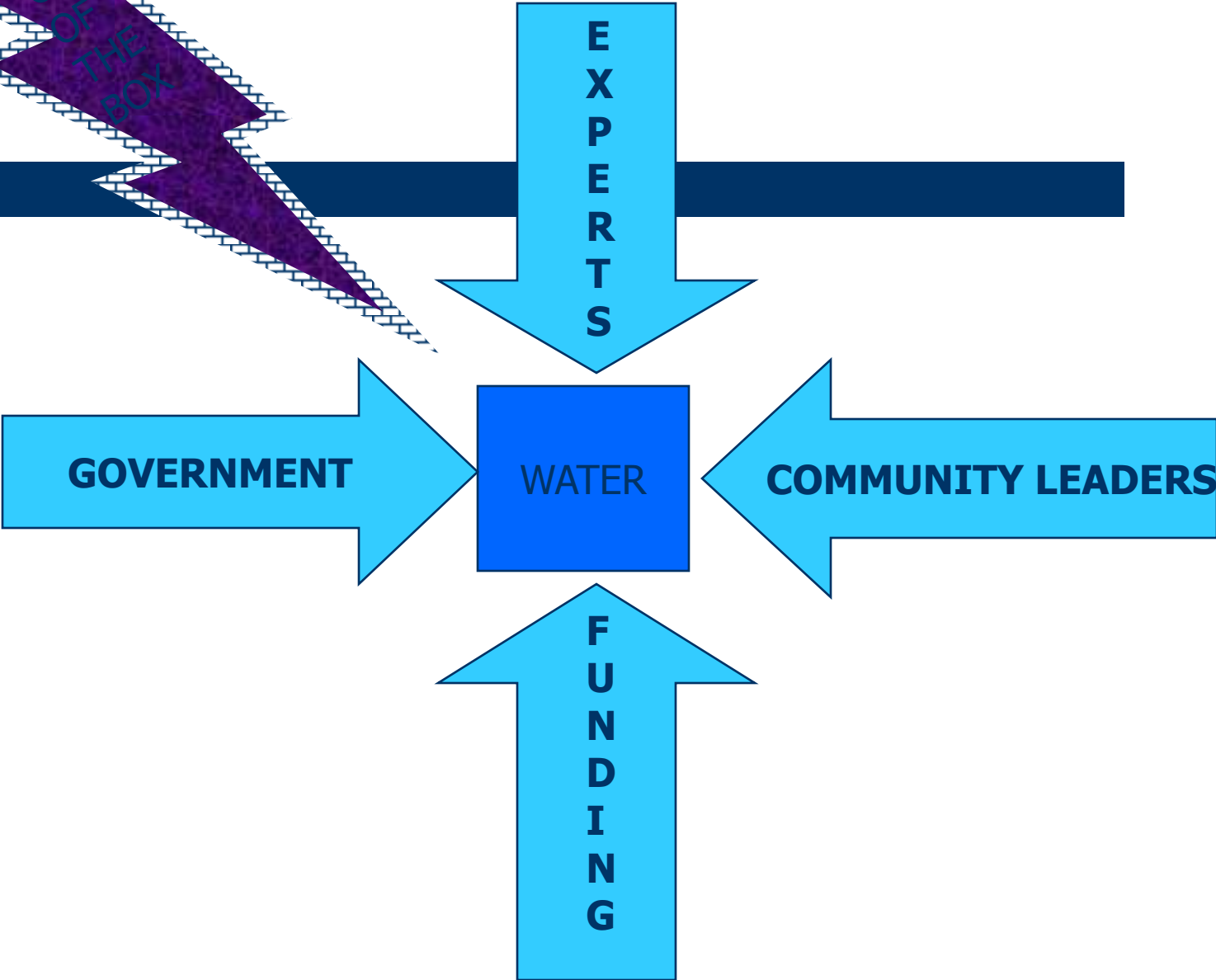
For long ride and smooth sailing

FORCE
Assembly line

CREATE AN ASSEMBLY LINE

- **COMMUNITY**– Primary stakeholders. Initiators and Implementers. Face all barriers to adoption.
Owners and drivers of the rainwater harvesting project.
- **TECHNICAL EXPERTS** – Information needs are different at each stage and for each set of stakeholders. Also, the entity disseminating information must be credible for it to be believed.
Technical experts inform and reassure people.
- **CORPORATES** – ‘Funds’ are another huge constraint for RWH
Financial and ‘Communication’ support from corporates is v. important.
- **GOVERNMENT** –All policies and their execution are done by government agencies. RWH land and storm water conduits are owned by government
Their permission and co-operation is necessary

P-4 APPROACH



AIDA MODEL OF ACTION



The diagram illustrates the AIDA model of action as a vertical stack of four colored blocks: Awareness (purple, bottom), Interest (blue, second), Desire (teal, third), and Action (yellow, top). A thick dark blue horizontal bar is positioned behind the Action block. A yellow arrow points upwards from the top of the stack.

ACTION

DESIRE

INTEREST

AWARENESS

4 WAY PARTNERSHIP

A success story with

CR Park M,N & P block

I - IDENTIFYING THE PARTNERS

COMMUNITY - CR Park M,N & P Block

- Opinion leaders & Welfare Decision makers
- Aware & Interested
- Strong need perception because of drying of tubewells

EXPERTS – Central Groundwater Board

- Specialists in G/W
- Detailed data base of hydro-geological conditions
- Mandate to assist RWH free of cost
- CR Park is in 'Notified' area – hence focus area for intervention

GOVERNMENT – Local Politicians

- Core constituency for them.
- MCD Counciller in charge of roads, drainage

- MLA has jurisdiction over DJB & can grant funds for future work

FUNDING PARTNER – Coca-Cola India, DJB

- Water CSR area for CCI
- Large resource base of people, contacts, PR for leveraging project for maximum awareness.
- Need public goodwill
- DJB is water supplying agency for Delhi
- RWH is focus area for them since surface water sources are increasingly difficult to access
- RWH is CM's pet project.

II – Create Awareness & Interest

- JAL BEEMA ABHIYAAN – Create ‘Pull’ for people to support RWH by RWA
 - Notice from RWA requesting all residents to come. RWA put extra effort because it was the host
 - MLA & Counciller invited – added pull for people and gave RWA a chance to prove its hold over admn to the residents
 - CGWB scientists & DJB invited. Ressed people of seriousness and technical validity of program
 - CCI – Made banners, posters. So created festive aura. Also got media involvement

III – Translate Interest into Action

Technical Support - CGWB was partner – So took special interest and made comprehensive plan. FORCE reduced time & effort demand on CGWB by giving site details

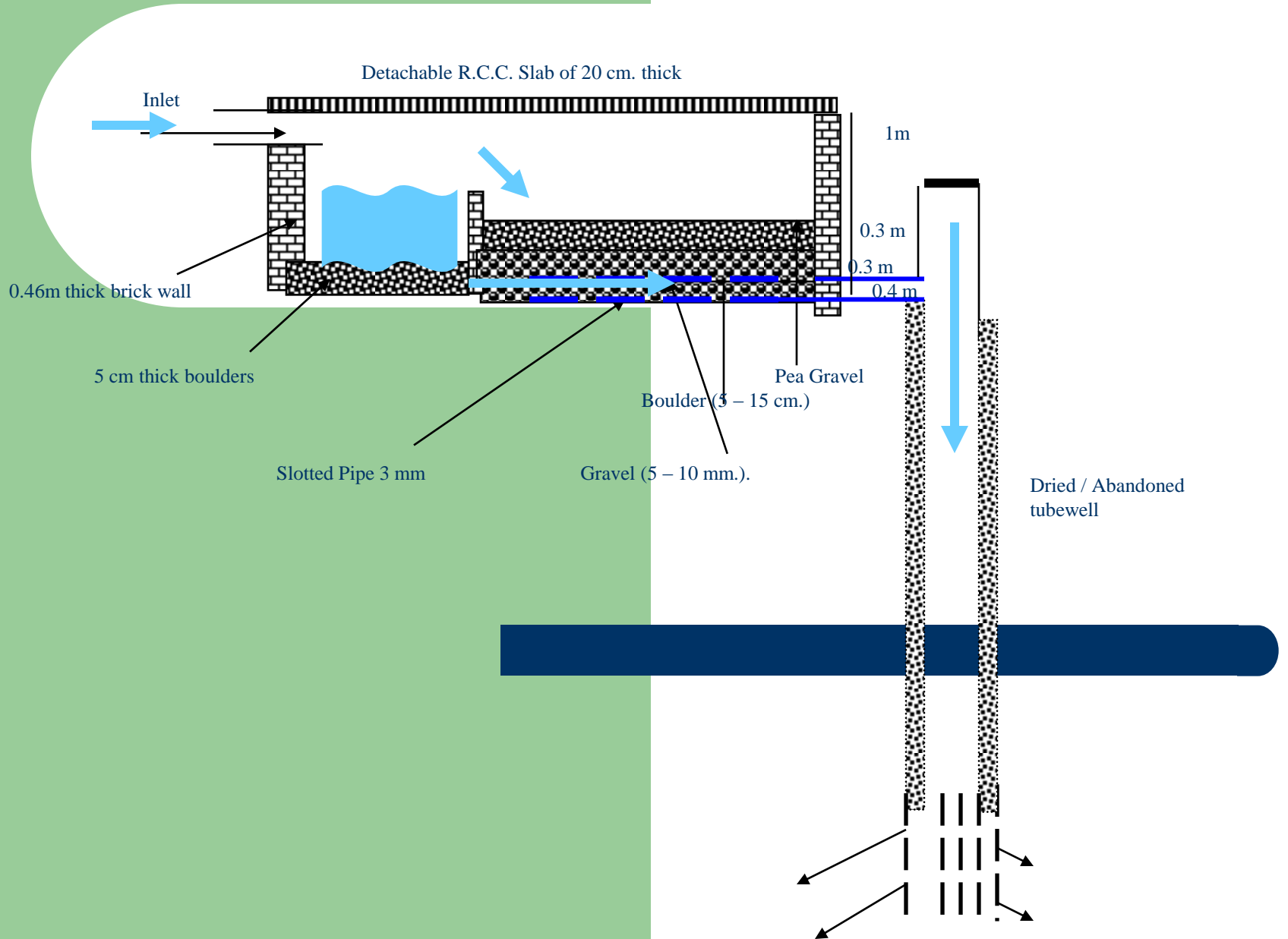
Financial Support – CGWB trained contractor called for estimate – 3,70,000/-.

- RWA engineer negotiated and reduced costs by 50K
- MLA promised to help RWA get DJB subsidy of 50K. Also got government agency to clean drains (50 K saved). Also sanctioned funds to get sidewalks covered – so less silt would get into structure.
- Experts instructed contractor on exact requirements. Hence no wastage
- Coca-Cola India – Gave 65% subsidy
- Residents readily paid for remaining 35% because they felt the RWA had worked hard to get a good 'Bargain' and because they had been convinced of utility by the Jal Beema Abhiyaan.

RAINWATER HARVESTING SYSTEM



Recharge to groundwater



III – Translate Interest into Action

Administrative Sanctions & Implementation

- RWA initiated and co-ordinated with all partners
 - Since technical experts and government had been project partners, all sanctions had either already been taken at design stage or were easily obtained late
 - Permissions arranged by the MLA and MCD Councillor. Also any grievances pacified by them.
 - Coca Cola used their learnings from worldwide implementation of such projects to make it move smoothly. Also empowered RWA to get best construction by linking payments to the RWA approval.

IMPACT ANALYSIS

- Piezometer readings show an increase in water table from 39 m in 2007 to 19 m in 2009 (post monsoon) i.e. average rise of 6.6 m / yr
- RWH now being done by several other pockets in CR park on the same model
- Project inspired a Delhi wide movement for groundwater recharge using dried tubewells – JAL SANCHAY ABHIYAAN
- MCD has made a list of dried tubewells in the area – intends to use them for G/W recharge.

FUTURE DIRECTION

- Scaling up and replication of P-4 across the globe
- Adaptation of structure design to urban realities
 - Removal of urban contaminants
 - Designing zero maintenance structures
 - Minimising cost / litre of efficient recharge
 - Modular designs of structures for flexibility of land use and ease of assembly.

RESULTS OF P-4 APPROACH

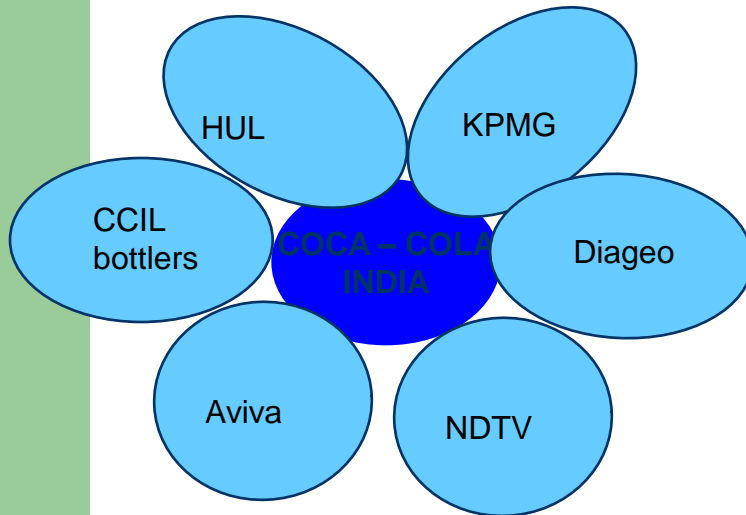
- 82 crore litres of annual recharge capacity in NCR region alone
 - = 16,641 people's annual water requirement for the next 25 years.
- Approx. 4 crores of funds channelised into rainwater harvesting
 - With investment of Rs. 2403 per person, 16,641 peoples 25 year water requirement has been catered to.
 - Additional savings to government because of reduction in cost of water treatment / distrbn.
- 22 Air Force Stations in Western Air Command to adopt rainwater harvesting. If implemented, the total yearly recharge capacity would be **4675 cr. litres**
- RWH at one SOS children village site led to their adopting at 39 locations across country – corporate part sponsor. Total potential 50 crore litres of annual recharge.
- JAL SANCHAY ABHIYAAN – groundwater recharge using 50 abandoned tubewells
- Sustainable community led WATSAN solutions for 2400 families of urban poor
- Innovations in RWH product design.
- Records of impact in terms of water table increase and water quality improvement.

POLICY IMPACT OF P-4

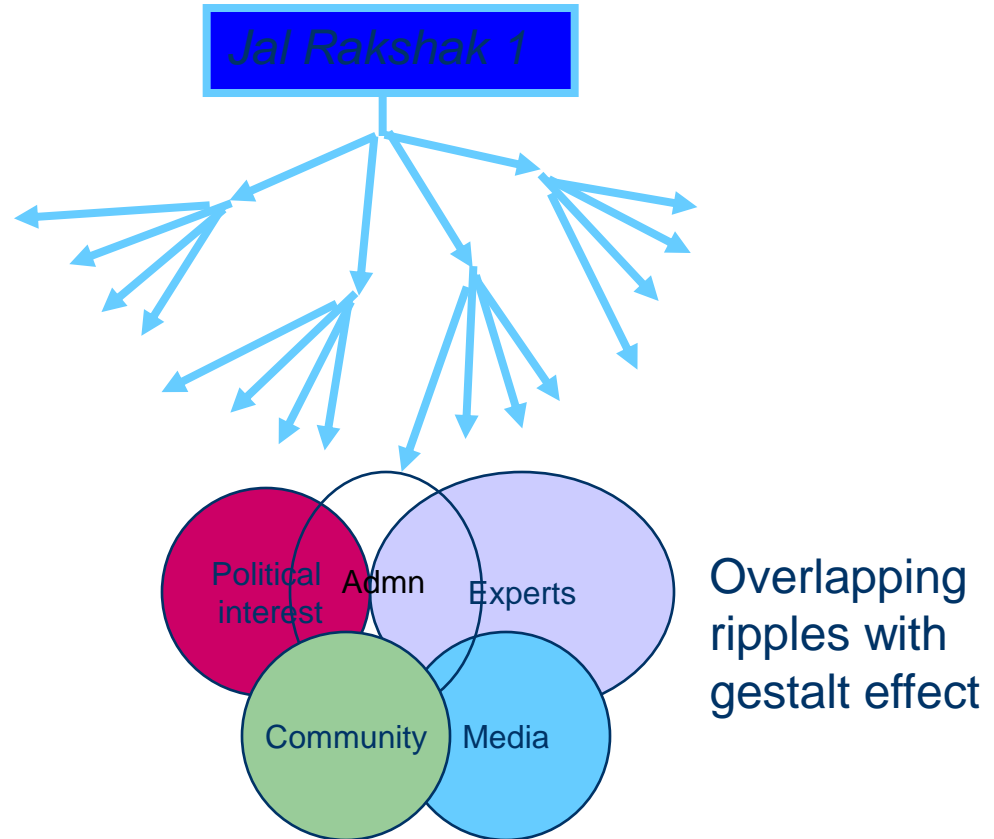
- Seminars, workshops, policy papers on water. Learnings from these have been shared with the government and technical experts.
- Design modifications discussed with CGWB some of which have been accepted
- Changes in government's water harvesting support policies.
 - DJB's financial assistance scheme – increase in sanctioned amount, more flexibility, guarantee of base amount
 - CM's Best RW Harvester Award for community groups / individuals
 - LG's modification to disastrous new notification of CGWB
 - FORCE is on the Groundwater Regulation and Management Advisory Committee headed by DC at 4 districts in Delhi. It restricts tubewell making. Policy directives are being made by it which will create an institutional framework for groundwater friendly regulations.
 - In consultation with FORCE to work out ways to enforce RWH in Delhi.
 - Use of 'My Delhi I Care Fund' for RWH
 - Pond revival scheme of government to include re-directing S/W flows into ponds.
- Winds of change at DJB – Action oriented Partnership mode
 - DJB has invited FORCE to organise result oriented P-4 meetings where RWH plans will be made and funding sanctioned across the table. First meeting with Federation of RWAs of Rohini (150 RWAs) to be held soon.

MULTIPLIER EFFECT OF P-4

- JAL BEEMA ABHIYAAN – P-4 partners doing In-situ RWH training at 50 locations and then following up with support. This kick-started the RWH movement in Delhi.
- Non-confrontationist, 'bhagidari spirit' Community mobilisation for water conservation in more than 300 localities and schools in NCR.
- Creation of A JAL RAKSHAK forum which will use the P-4 model to create action on water conservation across the country.



Water as CSR in urban areas for more and more corporates



Aao
Jal
Sancha
y
Karein



Boond
Boond
Dharti
Bharein



Save Water, Share
Water

THANK YOU