



CATCH WATER WHERE IT FALLS

TOOLKIT ON URBAN RAINWATER HARVESTING



Centre for Science and Environment

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Residential

Independent residences

RESIDENCE OF H RAMESHA

BOGADI, MYSORE, KARNATAKA



The family of H Ramesha next to his 1,000-litre kitchen tank

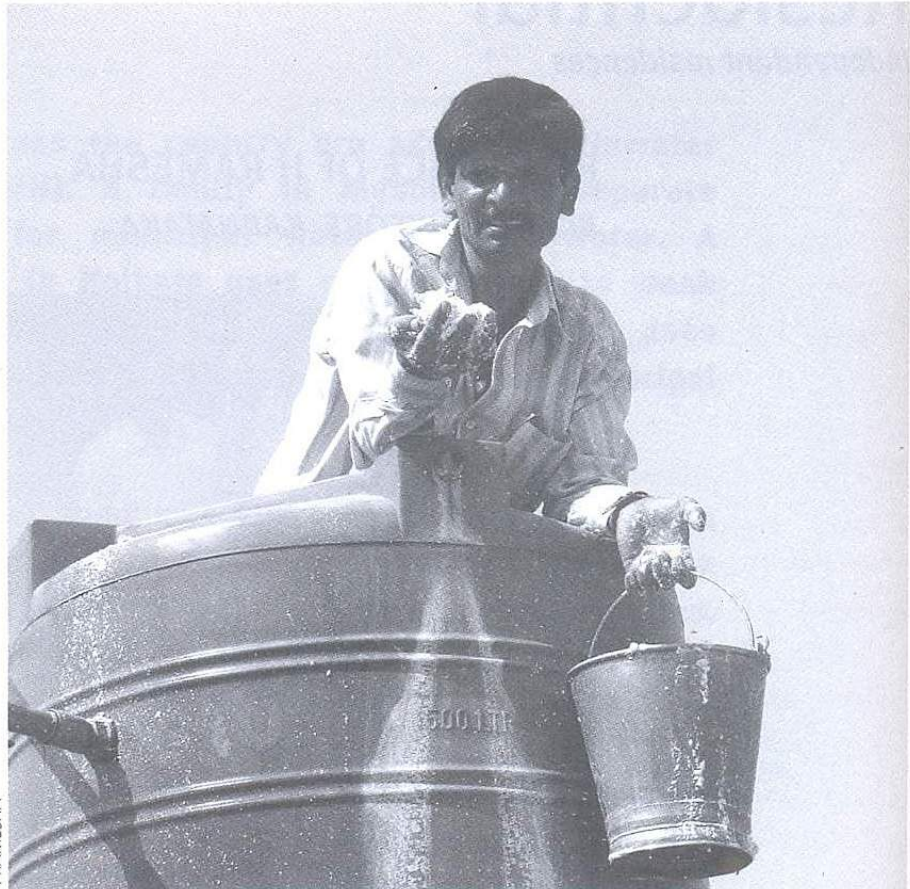
A 100 sq m roof area and just a 1,000-litre storage tank is sufficient for the drinking and cooking needs of this family of four members throughout the year

H Ramesha, an engineer with the Kaveri Irrigation Corporation, built a rainwater harvesting (RWH) system in his home in 2003. With a family of four, he had to source quality water, and looked to the skies. He took into account that Mysore receives good rainfall for 8-9 months a year. The house has a 100-sq m roof which captures rainwater to be stored in three tanks. Just the kitchen tank of 1,000 litres suffices for all drinking and cooking needs. The water stored in the bathroom tank (of 5,000 litres) is used for washing hair and bathing while the underground sump (of 6,000 litres) is also used for bathing.

WHY: A CONCERN ABOUT QUALITY

Before this house was built, Ramesha lived in the same area – Bogadi – which is dependent on municipal water supply sourced from groundwater. The water was not potable being highly saline and having a high total dissolved solid (TDS) level. Vani, Ramesha's wife,

says: "Food cooked with the municipal supply gets discoloured and even spoilt overnight." The family found the water quality unsuitable even for bathing purposes. Thus, the impetus for collecting rainwater in their new house. In fact, they even have separate taps for municipal water and rainwater in the kitchen.



H RAMESHA

Scales being removed from the overhead tank which stores municipal water

Even in the new house, the tank that stores municipal water – which has high levels of TDS or total dissolved solids – collects a lot of scales (see Box: *High TDS in municipal water*). This is borne out by tests conducted by a vendor who installed a solar water heater in the new house.

RAINWATER FOR DRINKING AND COOKING

Rainwater from the roof is directed to three storage tanks which includes the 1,000-litre kitchen tank which stores water for cooking and drinking. Municipal supply is used for bathing the three months in a year when it does not rain, and for cleaning and gardening round the year.

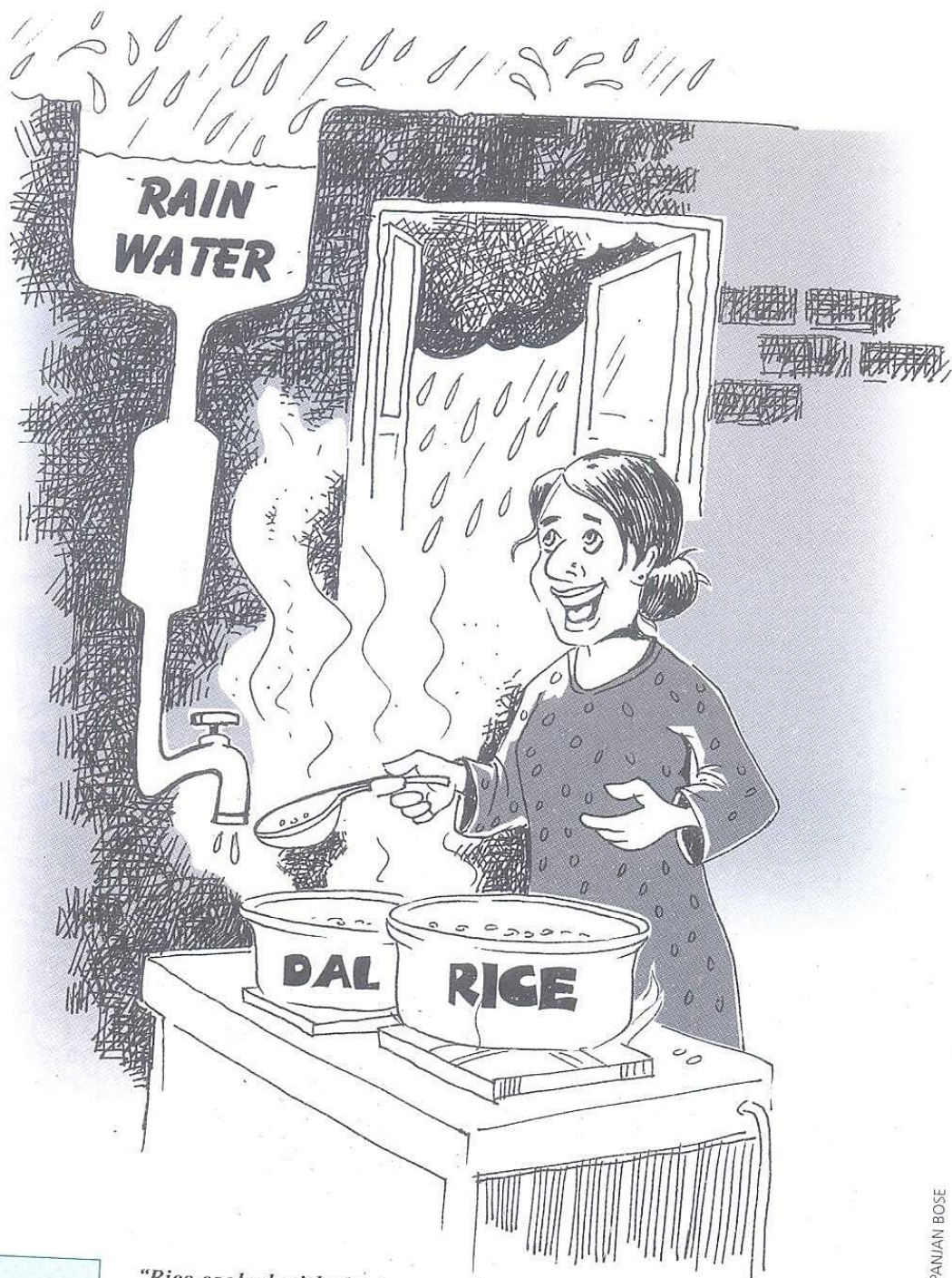
An elaborate system collects water for the kitchen tank. Rainwater is first directed to a filter tank. Before entry into the filter tank, a mesh filters out the coarse contaminants. The filter tank, in turn, leads to the

High TDS in municipal water

A vendor who installed a solar water heater in the house tested the water from different sources and confirmed the high TDS levels in groundwater in the Bogadi area.

Water source	TDS levels (mg/l)	BIS limit (mg/l)
Borewell water	1,260	500
Cauvery river	460	
Rainwater	80	

Notes: TDS: total dissolved solids, BIS: Bureau of Indian Standards, mg/l: milligrams per litre
Source: H Ramesha



"Rice cooked with the harvested rainwater is soft and white as jasmine," says Vani, wife of Ramesha

DIPANJAN BOSE

System details

Roof area: 125 sq m
 Storage systems: 3 tanks
 Kitchen tank: 1,000 litres
 Bathroom tank:
 5,000 litres
 Underground sump:
 6,000 litres
 Recharge system: 1
 Recharge pit: 4 ft x 3 ft x 3 ft
 Cost: Rs 12,000
 (excluding cost of sump)
 Year implemented: 2003

Designed and
 implemented by:

Ramesha

large 1,000-litre capacity tank, placed next to the kitchen. From this tank, pipes bring water to the kitchen directly. Inside the kitchen, water is filtered through a branded drinking water purifier.

The RWH system has clearly proved beneficial. Ramesha has since added on to the rainwater harvesting capabilities in his home. An additional system to tap water from a sloped section of the roof, 25 sq m in area, has also been built. This water is directed to the underground sump.

IMPACT

Ramesha estimates that his total water demand annually is 1.8 lakh litres and he gets about 80,000 litres from rainwater. Thus, almost 50 per cent of his total water demand is met by rainwater.



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LEAVES
OF
IMPORTANT
SURVIVAL
TREES
IN
INDIA—
MAHUA,
KHEJDI,
ALDER,
PALMYRA
AND
OAK

November 7, 2013

H Ramesha,
NO 3, 6 Cross, Bank colony,
Bogadi,
Mysore-570026,
Karnataka.
Phone: 9481169733
Dear Ms. Ramesha,

We are delighted to send you a copy of the book. The book is titled, "Catch Water Where It Falls, Toolkit on Urban Rainwater Harvesting". We are grateful to you for sharing your case study and answering all our queries patiently.

We would love to get your feedback. We are really sorry to send in the copy so late.

With best wishes

Sushmita Sengupta
Deputy Programme Manager
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Founder Director
ANIL AGARWAL

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(Revival of lakes)

Chapter 15: Case study: Baghajatin & Kajipukur lakes

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(Revival of lakes)

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Phone: 033 24127839
(Revival of lakes)

Chapter 15: Case study: Baghajatin & Kajipukur lakes

MADURAI

Mr Parmesh,
Site in-charge, site office,
Shanti Niketan Residential Enclave,
Madurai, Tamil Nadu.
Phone: 9843326583

(Regulations)

Chapter 3: Policy and Practice

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Shri Jaya Vilas Gardens,
Kadachenandal,
Madurai – 625 107,
Tamil Nadu.

Phone: 0452 3204711
(No municipal supply)

Chapter 11: Case study: Residence of N Arunachalam

MANGALORE

Sister Jeraldine
Somarpann Convent,
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Mangalore, Karnataka.

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(Rainwater harvesting system built-in into the system)

Chapter 12: Case study: Somarpann Convent

MUMBAI

Principal,
Jamnabai Narsee School,
Juhu Narsee Monjee Bhavan,
Narsee Monjee Marg,
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Mumbai – 400049, Maharashtra.

Phone: 022 26187575

(Rainwater harvesting has cut down water costs)

Chapter 12: Case study: Jamnabai Narsee School

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(Rainwater harvesting has cut down water costs)

Chapter 12: Case study: Jamnabai Narsee School

Prabodhan Krida Bhavan
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(Reduction of water use from municipal supply and recharge of aquifer)

Chapter 14: Case study: Recreational places (Prabodhan Krida Bhavan, Mumbai)

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E-mail: waterfieldindia@gmail.com

Phones: 022 21643331, 9821340043

(Reduction of water use from municipal supply and recharge of aquifer)

Chapter 14: Case study: Recreational places (Prabodhan Krida Bhavan, Mumbai)

MUSSOORIE

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Uttarakhand.

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Chapter 6: Storage

Stephen Alter,
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Uttarakhand.

E-mail: StephenAlter@woodstock.ac.in

(Supplements municipal supply)

Chapter 11: Case study: Residence of Stephen Alter

MYSORE

H Ramesha,
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Mysore – 570 026,
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Phone: 9481169733

E-mail: hebbale@gmail.com

(Drinking water, individual house)

Chapter 11: Case study: Drinking water

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ಜಲ ಸಂಪನ್ಮೂಲ ಇಲಾಖೆ

**Test results of bore well water sample pertaining to Sri. H.Ramesh, #3, "SUMUKH", 6th
cross, Bank colony, Bogadi, Mysore-26 for Total Dissolved Solids test.**

Date of receipt of sample: 27.02.2013

Sl. No	Parameter	Unit	Test Result	As per IS 10500-1991; Drinking Water Specification	
				Desirable limit	Permissible limit in the absence of alternate source
1	Total Dissolved Solids	mg/l	Bore well water 1383	500	2000

Note: The water samples are presumed to be a true representative.

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