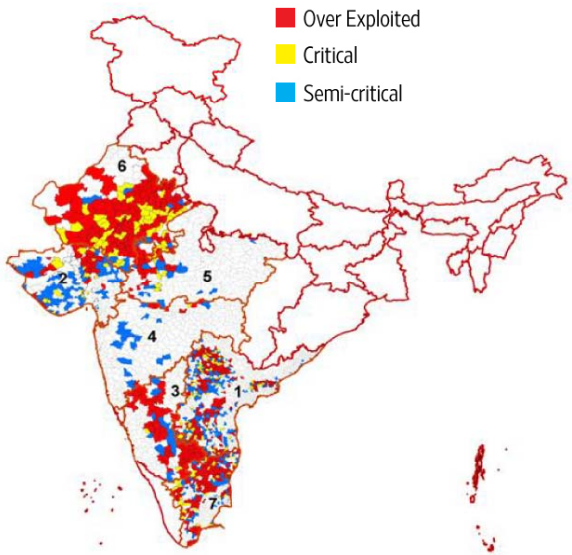
UMIFRE 21 CNRS-MAEE

Valeurs des eaux souterraines en Inde

Audrey Richard-Ferroudji

GROUND WATER STRESSED BLOCKS OF INDIA



1: Andra Pradesh, 2: Gujarat, 3: Karnatka, 4: Maha
5: Madhya Pradesh, 6: Rajasthan and 7: Tamil Na

EPIPHANY OF IDEAS

THE TIMES OF INDIA, CHENNAI
WEDNESDAY, SEPTEMBER 21, 2016

India's Great Drying Out

Cauvery dispute manifests growing water shortage, how does India tackle it?

Amitabh Kant

Bengaluru, a city that contributes nearly a third of India's software exports of $108 billion came to a standstill on account of the Cauvery river water dispute. Riots over water are increasingly shattering peace, tranquillity and public life.

Water is a critical resource which will determine India's ability to achieve rapid economic growth, improve the quality of life of its people and ensure environmental sustainability. India accounts for about 17% of the world's population but has only 4% of the world's fresh water resources. At 1,544 cubic metre per capita annual availability, India is already a water stressed country and rapidly moving towards becoming water scarce. What is the way forward for India to manage its water resources better?

At present, irrigation consumes about 84% of India's total available water with industrial and domestic sectors consuming a mere 12% and 4% respectively. India continues to use two to four times more water to produce one unit of major food crop when compared to Brazil, China and the US. 'Per drop more crop' is therefore imperative. With scientific usage it is possible to save at least half of water presently being used for irrigation purposes.

Ground water today accounts for a whopping 62.4% of net irrigation needs, 85% of rural drinking water needs and

Chad Crowe

participation of farmers, is critical.

Second, restoration, rejuvenation and renovation of existing water bodies needs to be given high priority in water scarce areas. Inventory of water bodies in villages and nearby areas needs to be prepared and geo-mapped. These water bodies when utilised for water storage would facilitate recharging for meeting the demand for drinking and irrigation purposes and act as natural sinks for excess water during rainy season.

In states like Punjab, Delhi, Rajasthan, non-existent regulations have led to irresponsible over exploitation and the present rate of withdrawal will lead to complete exhaustion of ground water within a decade

loss. We need to adopt water saving technologies like drip and sprinkler irrigation systems which can deliver water in a controlled manner to parts of plains where it is most efficiently absorbed. We also need to introduce new agronomic practices like raised bed planting, sub surface irrigation and precision farming for economising water use. Additionally, we need to incentivise farmers to shift from water intensive crops like wheat, paddy and sugarcane to less water guzzling crops like pulses, millets and barley.

Fortunately, all is not lost. The recent interaction of Prime Minister Narendra Modi with state chief ministers on measures to handle drought revealed unique practices that states have initiated at field level. In Rajasthan, the Mukhya Mantri Jal Swavlamban Abhiyan has led to convergence of resources available under integrated watershed programme, MGNREGA and state schemes for detailed mapping of each and every water structure through a community led initiative. In Jharkhand, after several years of drought, a new initiative Mera Gaon Meri Yojana has led to an integrated participative planning exercise for conservation and preservation of water bodies through a community project.

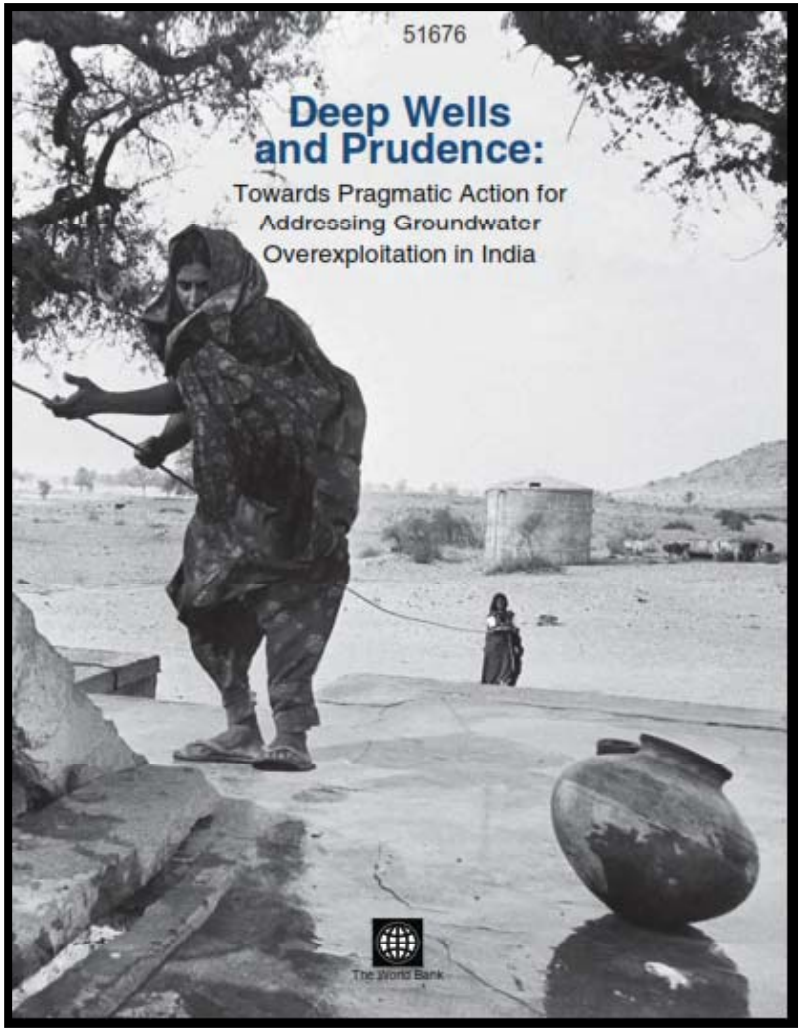
In Andhra Pradesh, 55,000 farm ponds have been developed in the last two years and 10 million hectares have been covered for irrigation through MGNREGA with all of them being geo-tagged. Madhya Pradesh enforced "tail-end first" rule which led to farmers at the tail end receiving canal water first, and water was distributed in an orderly manner. Maharashtra is taking measures to shun water intensive crops. Earlier in Gujarat check dams helped drought proof the entire state.

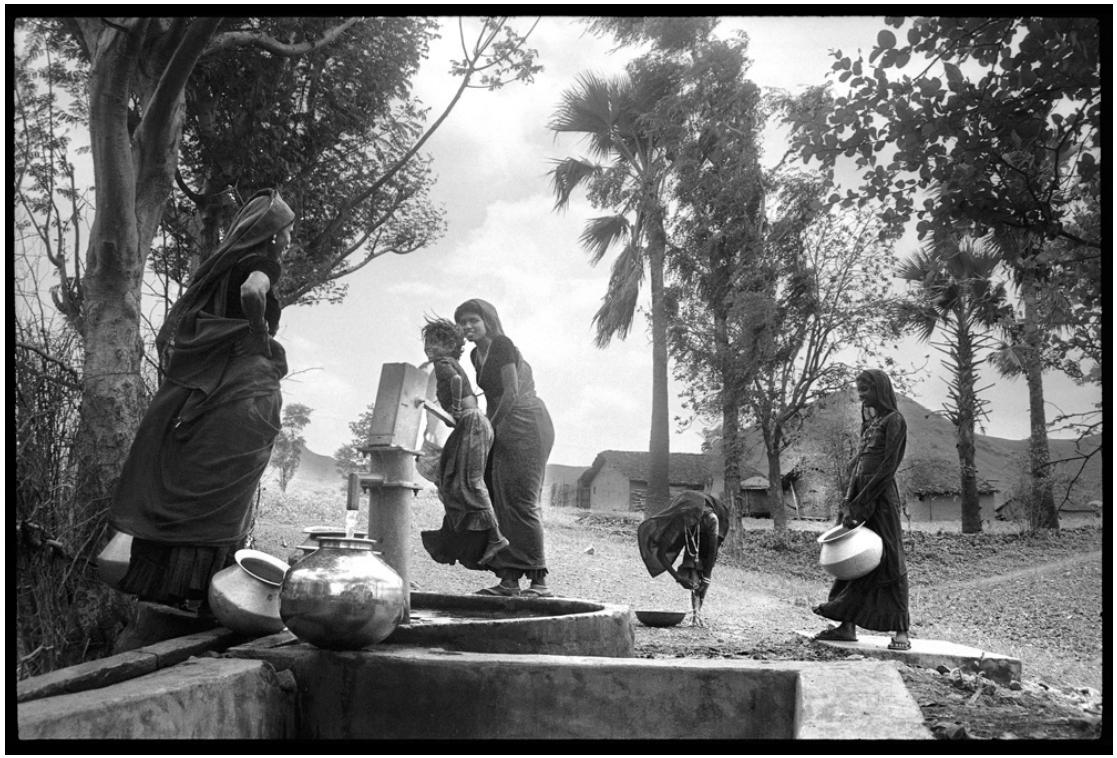
For tracking the initiatives in the states, Niti Aayog has developed a water management index which will rank states in management of water resources. India also needs to adopt innovative and futuristic management techniques in recycling, reusing waste water for industrial use and adopt latest techniques of desalination in coastal areas.

There are immense lessons to be learnt from the way water is managed in Singapore. All waste water is collected and the city has a separate drainage system to ensure it doesn't mix with run-off. The waste water and drainage water are both recycled and put into the city's water supply. Singapore also has dynamic pricing of water and sets different rates for different consumption levels. This has significantly impacted water usage.

India's ability to manage and govern water will determine its destiny. For this it needs a 3J strategy – Jal Sanchay (water storage), Jal Sinchan (efficient water use) and Jan Sanrakshan (water conservation).

The writer is CEO of Niti Aayog. Views are personal





⇑ **Roots of water by Amos Jaisingh, "A girl enjoys pumping water with her mother, while other women wait for their turn" Kakrana village, Madhya Pradesh, 2004, Exhibition Pondy Photo, mars 2014**

⇐ **(World Bank, 2010) coverage, Photo Gauri Gill**

Patrimoine en danger et source d'émancipation

Qualifications et objectifications des eaux souterraines

Quasi invisibles

Les eaux souterraines sont mises en visibilité de manières plurielles, par des artefacts et des personnes

A la croisée des travaux en sciences sociales sur les eaux souterraies, en développement et des travaux en sociologie de l'environnement

THE HINDU

NATIONAL > TAMIL NADU

Published: November 28, 2015 00:00 IST | Updated: November 28, 2015 05:49 IST KARAIKAL, November 28, 2015

Pilot project rolled out for conserving groundwater

- M. Balaganessin

E. Vallavan, District Collector, speaking at a workshop on "water conservation, security and quality" organised by the Central Ground Water Board, Central Ground Water Authority, and the Union Ministry of Water Resources, River Development and Ganga Rejuvenation in Karaikal on Friday.

It is taken up under integrated water management and water security plan

The Central Ground Water Board, South Eastern Coastal Region, Chennai, will implement a pilot project on "integrated water management and water security plan" in the two habitations of Nedungadu and Annavasal in Karaikal district for two years.

Sciences Sociales et les Eaux souterraines: un champs en développement

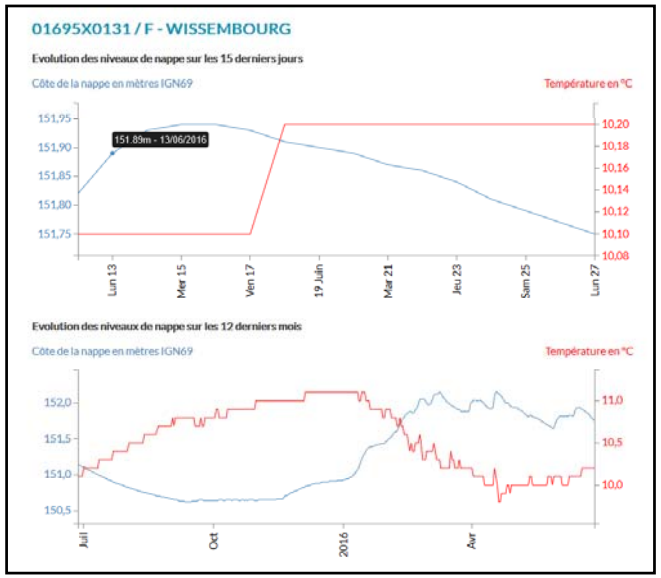
- **Des travaux sur la dimension sociale des eaux souterraines à développer (Mitchell et al., 2012; Mollinga, 2008)**
- **Une majorité de travaux dans la lignée d'Ostrom (1990) en économie des ressources naturelles/institutionnelle**
- **Accent sur le caractère individuel atomisé et diffus des usages.**
- **Gouvernance, Institutions, Regulation (En Inde: Diwakara, 2006; Shah, 2012; Shah et al., 2008)**
- **Inégalités (En Inde: Janakarajan, Moensh, 2006; Srinivasan, Kulkarni, 2014) Savoir des usagers (Aubriot, 2011), ecologie politique (Birkenholtz, 2015, Faysse et Petit, 2012)**

Inventorier et analyser des dispositifs de mise en visibilité des eaux souterraines en France et en Inde

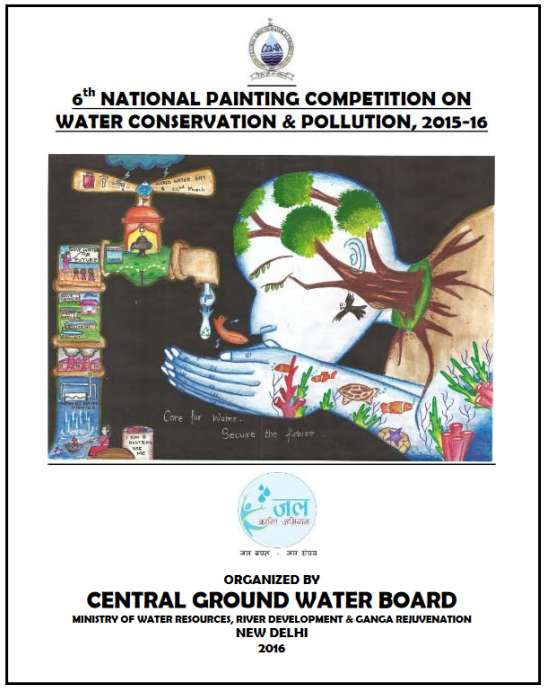
France: SAGE/contrat – Inde: Groundwater Boards

Methode sites web, documents, entretiens et observations des usages

Contenu et format (public, enjeux rendus visibles, perspective normative, format de l'information)



www.sage-ill-nappe-rhin.alsace/



Les eaux souterraines dans la presse

Artefacts qui touchent un large public et contribuent à la mise à l'agenda des problèmes environnementaux (Nambiar, 2014; Nirmala et Arul Aram, 2016)

France: peu d'articles et principalement dans les médias régionaux – opportunité plus que stratégie

Inde: plus grande visibilité

L'exemple de The Hindu

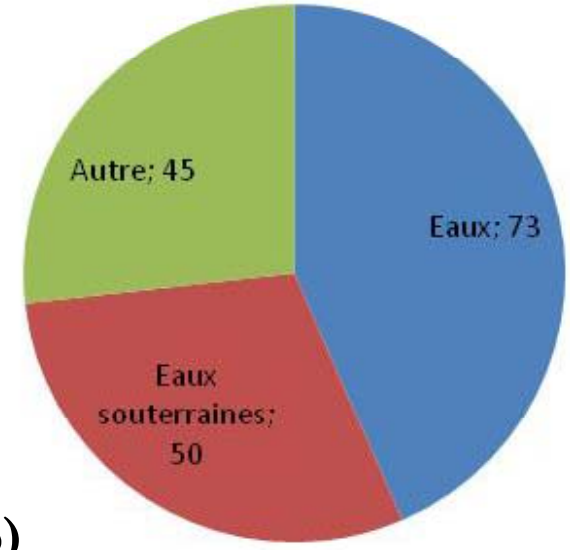
- Journal de centre gauche
- Support écrit et langue anglaise: langue de l'élite éduquée (Montaut, 2004)
- 1 314 016 ex. en moyenne Janv-Juin 2014 (Indian Readership Survey 2007, Round 1) /le Monde 298 529 exemplaires (2014, ODJ)
- Edition en ligne depuis 1995

Enquête sur un journal qui contribue à mettre en visibilité les eaux souterraines

Période	01/07/10 au 31/12/10	2011	2012	2013	2014	01/01/15 au 31/06/15
Nombre d'articles Etiquetés Groundwater dans The Hindu	7	2	40	95	21	7
Nombre d'articles contenant le mot Groundwater dans The Hindu	390 (827 en 2010)	940	1419	1572	1386	853
Nombre d'articles contenant « eau souterraine » et/ou « eaux souterraines » dans le journal Le Monde	15	18	30	66	22	Nc
Nombre d'articles de The Hindu inclus dans l'analyse de contenu	10	13	36	68	26	15

Un choix éditorial: ***« Les nouvelles locales sur la corruption, les impôts fonciers ou de les niveaux des eaux souterraines en baisse, par exemple, sont rarement récompensées avec des « j'aime » sur Facebook. Mais ils sont d'une haute importance car ils donnent aux citoyens l'information vitale nécessaire pour voter et ils donnent aux organisations militantes les munitions nécessaires pour agir.*** **» Anuj Srivas (06/04/2014 « La mort de l'industrie de la presse »**

Un journal militant pour une préservation des eaux souterraines

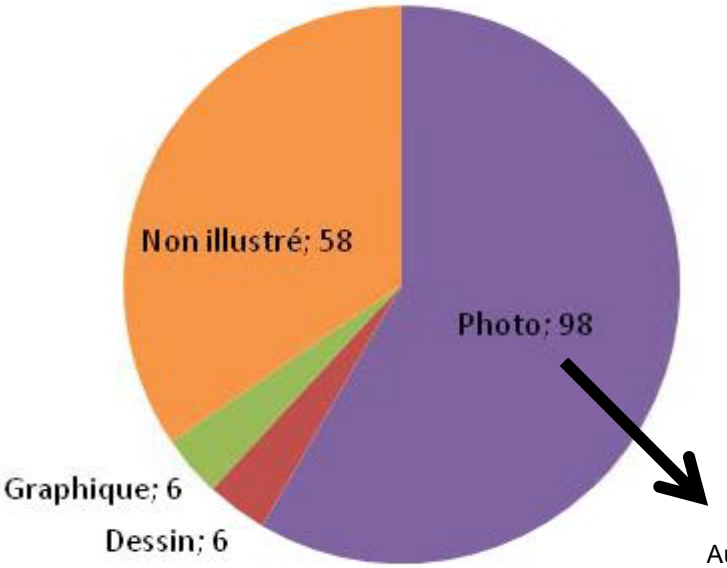


Sujets des 168 articles du corpus:

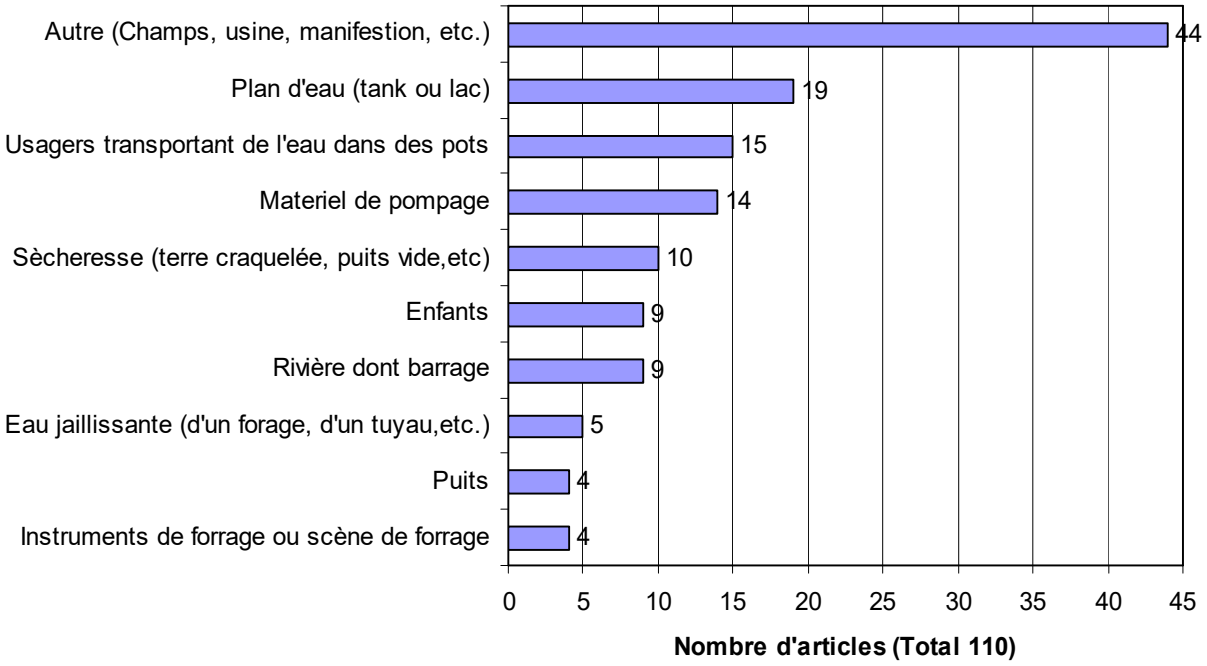
- **Les enjeux quantitatifs plus visibles que les enjeux qualitatifs**
  - **Epuisement des eaux souterraines : 72 art.(43%)**
  - **Pollution : 34 art.(20%).**
- **Enjeux urbains autant visibles que les enjeux ruraux**
- **Mesures:**
  - **réglementation : 34 art. (20%)**
  - **recharge des eaux souterraines : 28 art. (16%)**
  - **gestion participative: 19 art. (11%).**

Auteurs: des militants ou des grandes figures de la politique de l'eau ou de la politique agricole (Ramaswamy Iyer, M.S. Swaminathan, etc)

Au-delà des enjeux de protection, un journal qui valorise d'autres qualités de ces eaux



Pas de carte!

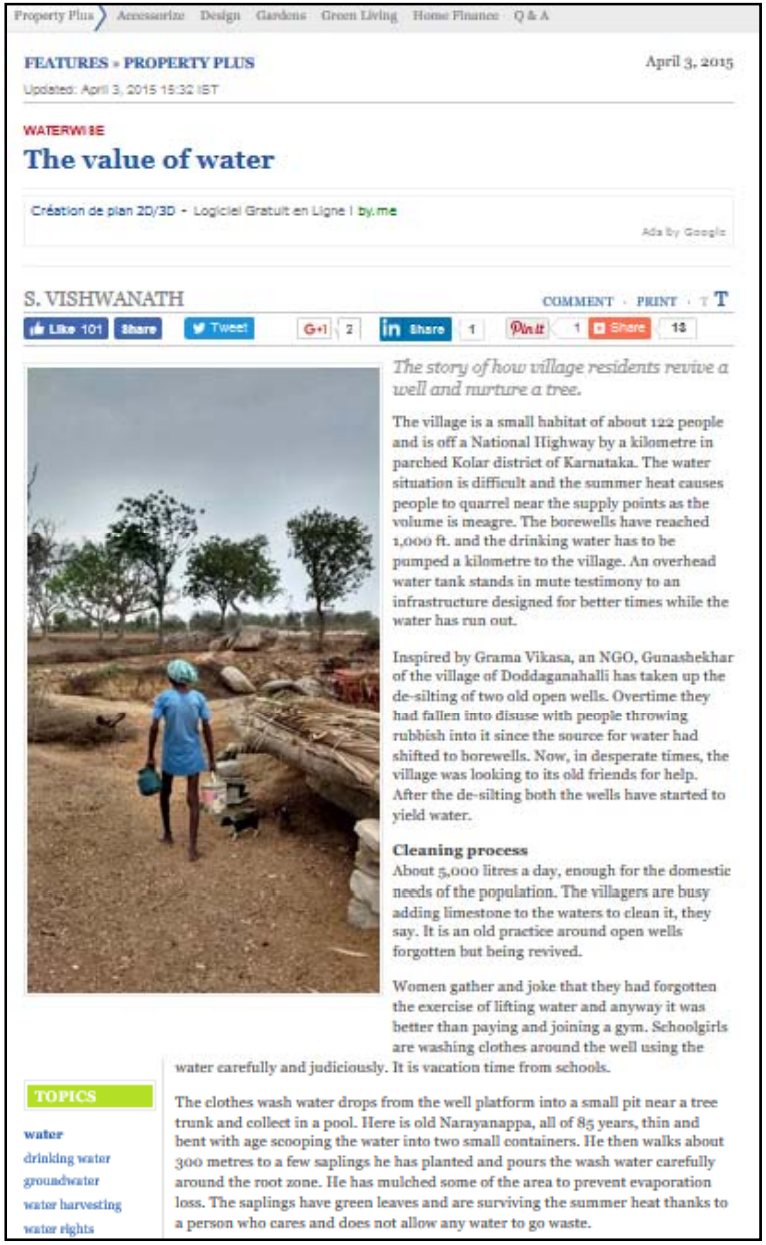


Quatre qualifications des eaux souterraines

Qualification des eaux souterraines
Ce qui est valorisé
Mesures associées
Figures valorisées

Quatre qualifications des eaux souterraines

Qualification des eaux souterraines	Patrimoine en danger
Ce qui est valorisé	Protection du patrimoine
Mesures associées	Régulation des prélèvements et des usages – sensibiliser les usagers
Figures valorisées	L'état économe et régulateur - l'usager économe



Property Plus | Accessorize | Design | Gardens | Green Living | Home Finances | Q & A

FEATURES » PROPERTY PLUS

April 3, 2015

Updated: April 3, 2015 15:32 IST

WATERWISE

The value of water

Création de plan 2D/3D - Logiciel Gratuit en Ligne | by.me

Ads by Google

S. VISHWANATH

COMMENT · PRINT · T

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The story of how village residents revive a well and nurture a tree.

The village is a small habitat of about 122 people and is off a National Highway by a kilometre in parched Kolar district of Karnataka. The water situation is difficult and the summer heat causes people to quarrel near the supply points as the volume is meagre. The borewells have reached 1,000 ft. and the drinking water has to be pumped a kilometre to the village. An overhead water tank stands in mute testimony to an infrastructure designed for better times while the water has run out.

Inspired by Grama Vikasa, an NGO, Gunashekhar of the village of Doddaganahalli has taken up the de-silting of two old open wells. Overtime they had fallen into disuse with people throwing rubbish into it since the source for water had shifted to borewells. Now, in desperate times, the village was looking to its old friends for help. After the de-silting both the wells have started to yield water.

Cleaning process

About 5,000 litres a day, enough for the domestic needs of the population. The villagers are busy adding limestone to the waters to clean it, they say. It is an old practice around open wells forgotten but being revived.

Women gather and joke that they had forgotten the exercise of lifting water and anyway it was better than paying and joining a gym. Schoolgirls are washing clothes around the well using the water carefully and judiciously. It is vacation time from schools.

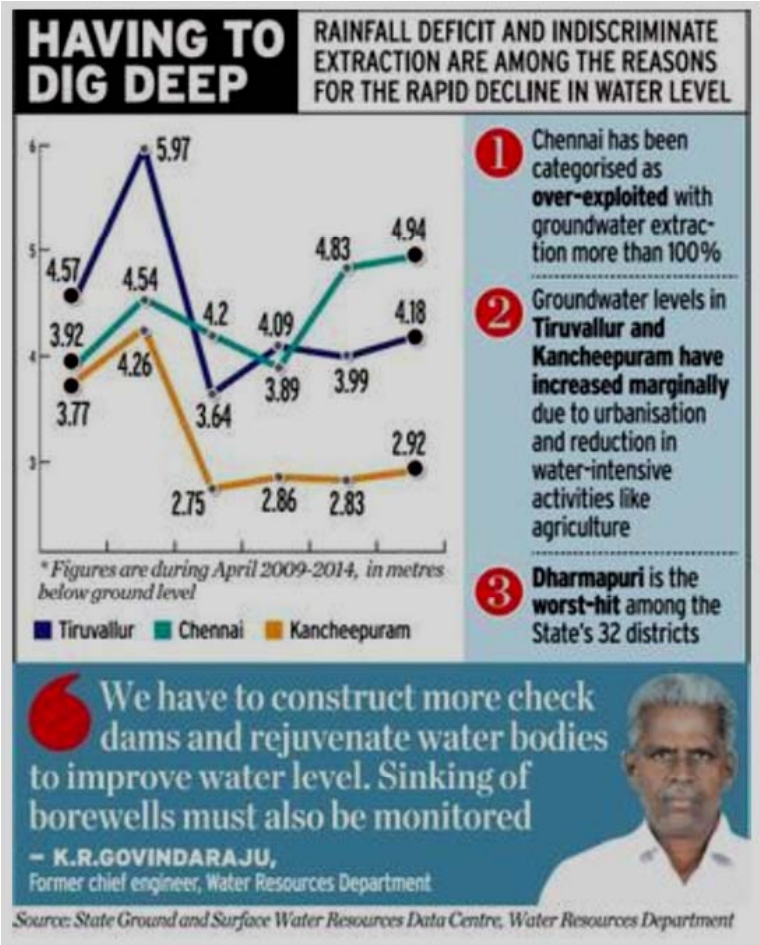
The clothes wash water drops from the well platform into a small pit near a tree trunk and collect in a pool. Here is old Narayanappa, all of 85 years, thin and bent with age scooping the water into two small containers. He then walks about 300 metres to a few saplings he has planted and pours the wash water carefully around the root zone. He has mulched some of the area to prevent evaporation loss. The saplings have green leaves and are surviving the summer heat thanks to a person who cares and does not allow any water to go waste.

TOPICS

water
drinking water
groundwater
water harvesting
water rights

Quatre qualifications des eaux souterraines

Qualification des eaux souterraines	Patrimoine en danger	Ressource à optimiser
Ce qui est valorisé	Protection du patrimoine	Efficacité de la gestion
Mesures associées	Régulation des prélèvements et des usages – sensibiliser les usagers	Développement de la récupération des eaux de pluie de la recharge et des connaissances scientifiques
Figures valorisées	L'état économe et régulateur - l'usager économe	L'expert technique ou scientifique



Quatre qualifications des eaux souterraines

» TODAY'S PAPER » PROPERTY PLUS July 21, 2012

Against great odds, they provide us water

S. VISHWANATH

PRINT · T T

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The crucial role of the informal sector in providing water is not well understood. It meets over 60 per cent of India's total water demand. Here's an example, says water expert S. Vishwanath

It is tough work providing water to India's growing needs. —Photo: K. Murali Kumar

They came in the afternoon on Saturday. The borewell drilling equipment came in two large trucks struggling to manoeuvre in a narrow tree-lined street. One of the trucks had a drilling rig and a large compressor. It costs Rs.1.15 crore, so the owner said, and can drill up to 1,250 ft. The other one had diesel, more equipment for drilling and sundry other stuff such as cooking equipment for the crew and water for the drill bit to be cooled.

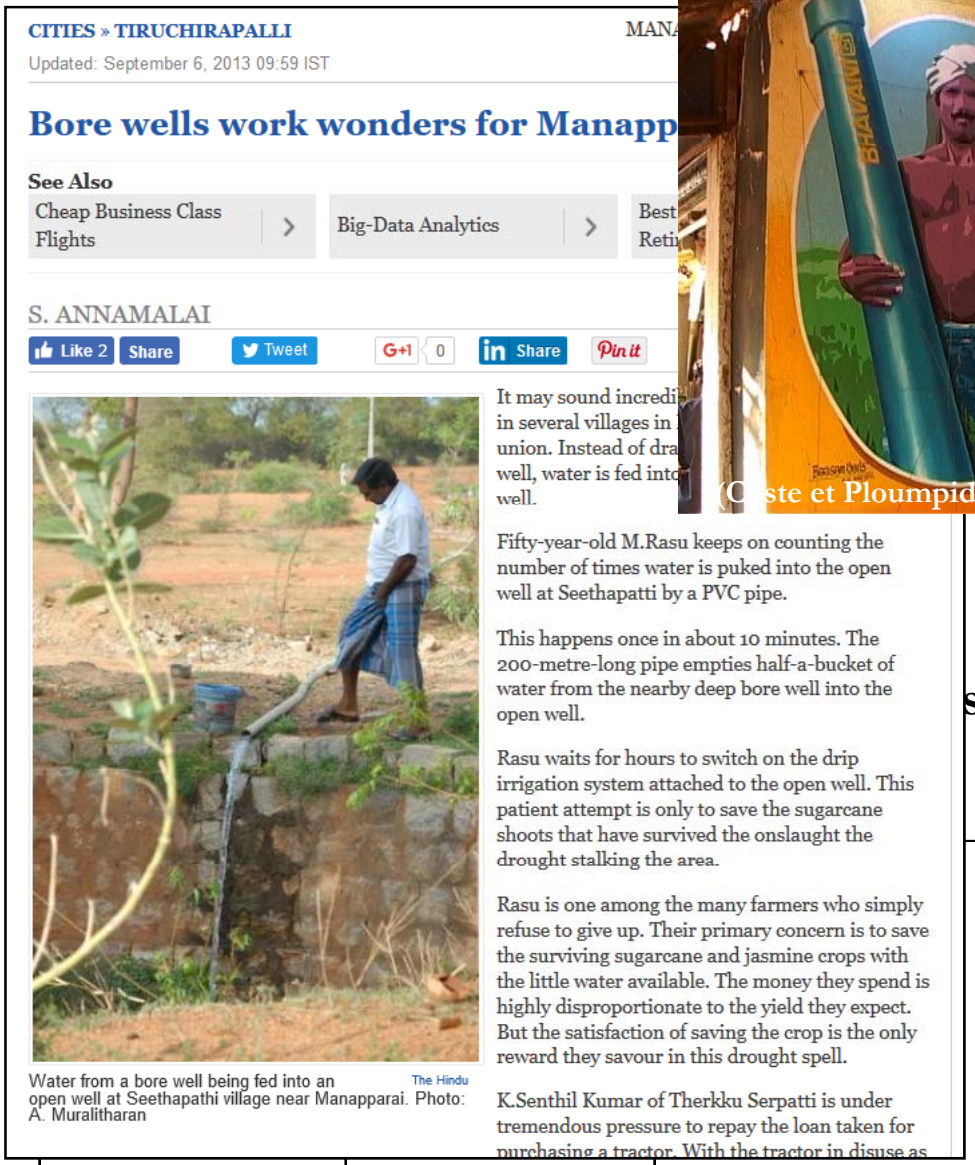
Much before them a hydro-geologist had come, swinging a pendulum and marching about looking for a possible spot for drilling. The city has been facing a water crisis due to bad rains plus an exploding demand. Political pressure had sanctioned 10 borewells to each corporator. These were to be drilled in each ward of the city and provide supplemental water.

The hydro-geologist then placed a steel rod in a place next to the road and a storm-water drain and had walked away. This was the point considered sacred and inviolable. The drilling crew found it and went about chopping the saplings and tree branches obstructing their rig from reaching the same spot, neither an mm here nor an mm there.

After much back and forth the drill got to the

Moyen de survie
Droit d'accès à l'eau
Développement des puits pour un accès à l'eau pour tous - pro-poor water policy
Le foreur - Celui qui donne accès à l'eau souterraine

Quatre qualifications des eaux souterraines



CITIES » TIRUCHIRAPALLI

Updated: September 6, 2013 09:59 IST

Bore wells work wonders for Manapp

See Also

Cheap Business Class Flights | Big-Data Analytics | Best Reti

S. ANNAMALAI

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It may sound incredi in several villages in union. Instead of dra well, water is fed into well.

Fifty-year-old M.Rasu keeps on counting the number of times water is puked into the open well at Seethapatti by a PVC pipe.

This happens once in about 10 minutes. The 200-metre-long pipe empties half-a-bucket of water from the nearby deep bore well into the open well.

Rasu waits for hours to switch on the drip irrigation system attached to the open well. This patient attempt is only to save the sugarcane shoots that have survived the onslaught the drought stalking the area.

Rasu is one among the many farmers who simply refuse to give up. Their primary concern is to save the surviving sugarcane and jasmine crops with the little water available. The money they spend is highly disproportionate to the yield they expect. But the satisfaction of saving the crop is the only reward they savour in this drought spell.

K.Senthil Kumar of Therkku Serpatti is under tremendous pressure to repay the loan taken for purchasing a tractor. With the tractor in disuse as

Water from a bore well being fed into an open well at Seethapathi village near Manapparai. Photo: A. Muralitharan The Hindu

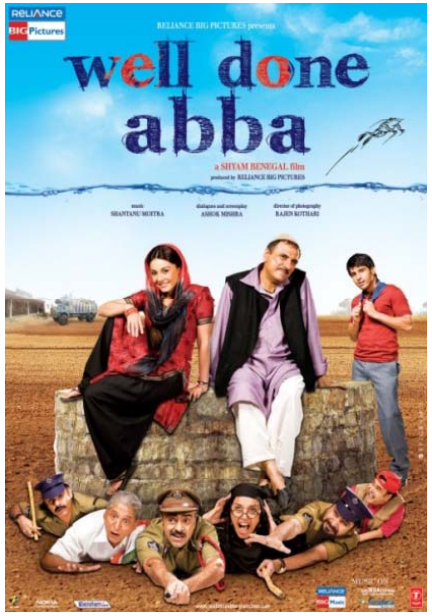
(Caste et Ploumpidis, 2007)

		Source de d'émancipation
		Indépendance et prestige
s	des puits pour un accès à l'eau pour tous - pro-poor water policy	Développement des puits
	Le foreur - Celui qui donne accès à l'eau souterraine	Le propriétaire d'un puits - Celui qui est indépendant dans son accès à l'eau

Conclusion

Visibilité dans la presse et pluralité de qualifications

Qualification des eaux souterraines	Patrimoine en danger	Ressource à optimiser	Moyen de survie	Source de d'émancipation
Ce qui est valorisé	Protection du patrimoine	Efficacité de la gestion	Droit d'accès à l'eau	Indépendance et prestige
Mesures associées	Régulation des prélèvements et des usages – sensibiliser les usagers	Développement de la récupération des eaux de pluie de la recharge et des connaissances scientifiques	Développement des puits pour un accès à l'eau pour tous - pro-poor water policy	Développement des puits
Figures valorisées	L'état économe et régulateur - l'usager économe	L'expert technique ou scientifique	Le foreur - Celui qui donne accès à l'eau souterraine	Le propriétaire d'un puits - Celui qui est indépendant dans son accès à l'eau

Conclusions

- **Ambivalence des eaux souterraines dans le journal The Hindu : promouvoir leur préservation tout en accueillant des justifications de leur exploitation**
- **Ambivalence des engagements et arrangements**
- **Le défi d'une politique de préservation qui ne soit pas « contre le peuple »/anti-people**