CPR Working Paper

Unravelling Rural India's enduring water indigence: framing the questions, issues, options and opportunities.

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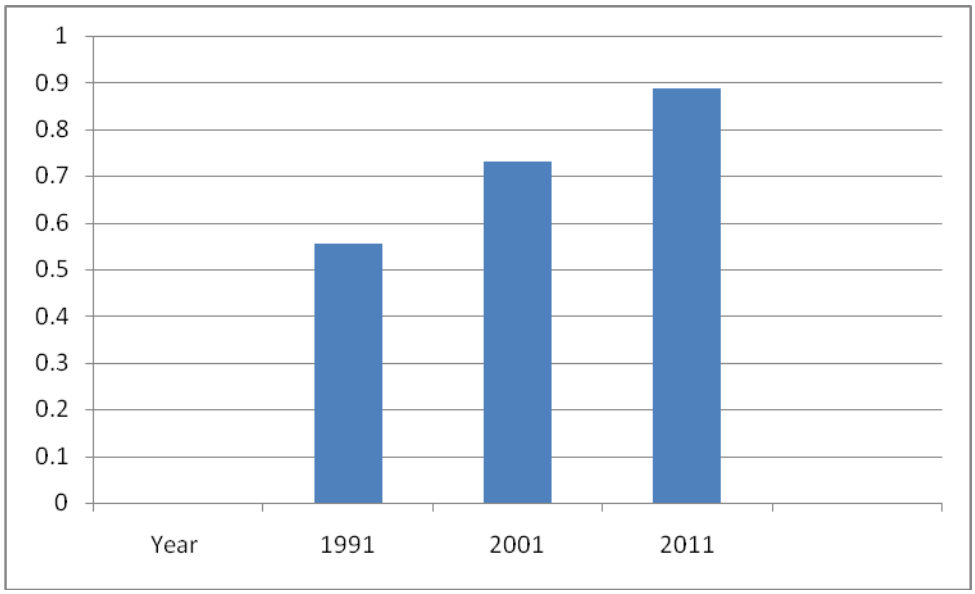
EXECUTIVE SUMMARY

The first section of this paper seeks to describe the current status and general understanding of the problems related to rural drinking water delivery in India. The second section looks at the course policy has traversed in over 60 years of planning. How has policy perceived the constraints to achieving universal access and sought to address them over time? The third section critically analyses the limitations of the existing understanding and response and explains why improved outcomes are unlikely in this situation and an alternate approach is needed in the scheme of Centre State transfers. The fourth section suggests an alternative design for the scheme to transfer funds from the Centre to the States as the key intervention to alter the situation. The final section discusses the prospects of such a design being adopted.

1. At one level, India appears to have made remarkable progress in making available safe drinking water to rural households. The graph below shows that almost 89% of rural households had access to safe drinking water by 2011.

India: Proportion of Rural Households with Access to Safe Water



Source: Compiled from data on the Website of the Registrar General of India, Ministry of Home Affairs, Government of India.

2. The considerable investment in rural drinking water (Rs. 1,55,649 crore from the First to the Eleventh Five Year Plan) appears to have borne fruit. However, despite this investment which has grown exponentially in the period 2007-12 (Rs. 88,211 crore), there is concern about issues that constrain adequate access to safe drinking water on a sustainable basis. The problem areas in rural drinking water are best captured by the fact that the goal of extending safe drinking water coverage to all of rural India seems to constantly float out of reach even as it appears to be almost within grasp. The generally accepted explanation for this phenomenon is that problems of source sustainability, system sustainability and increase in rural population cause habitations to 'slip back' into not covered or partially covered or water quality affected status.

The Elusive Nature of Universal Access to Safe Rural Drinking Water in India

Sr. No.	Period	Villages/ Habitations Covered	% of all villages/ Habitations with safe access (based on survey at the beginning of the period)	Balance problem settlements still left (based on latest survey for the end of the period)
1.	2.	3.	4.	5.
1.	1972-1980	94,000	90%	2,31,000
2.	1980-1985	1,92,000	90%	1,62,722
3.	1985-1994	1,61,652	99%	1,40,975
4.	1994-2000	3,04,000	95%	4,56,000
5.	2000-2007	3,52,992	93%	7,98,967
6.	2007-2012	6,65,034	91%	

3. National policy on rural drinking water has seen three distinct phases since the beginning of the planning process in 1951. The first phase saw insignificant central investment in the sector till 1972-73. This was followed till 1999 by a second phase in which the Centre began to support the goal of improved access to rural drinking water through dedicated financing to cover targets of problem settlements. This phase saw an increasing role being played by state engineering departments or boards which conceived

and implemented most schemes. However, in time community participation came to be viewed as a critical factor in better design and maintenance. The third phase, which began in 1999 and continues till now, represents an attempt at introducing reform by asking States to bring in community participation in the design, construction and maintenance of some schemes while other schemes continue under the earlier model of delivery through state engineering departments or boards.

4. Various factors brought about a realization of the need for reform. But it has been a reluctant acceptance in official policy. Change has co-existed with a continuation of the traditional approach of funding targets of asset creation. Over time, the limited space initially created for a demand driven approach has shrunk in size.

5. The necessity of supply side solutions to the rural drinking water problem is rooted in the understanding of the causes of 'slipback 'noted above. However, this understanding is flawed. The repeated occurrence of not covered and partially covered habitations has little to do with ground water stress, inadequate funding for maintenance or increase in rural population. The table below demonstrates this lack of association and regression analysis shows little explanatory power for the relevant variables.

Habitation Survey 2003, Ground water stress, Maintenance Expenditure and Rural Population Growth

State	%age of habitations with inadequate access to drinking water	(%age of blocks/taluks/mandals/ showing Ground Water stress)	(Annual Per capita Maintenance Expenditure)	(%age in in Rural Population) (11991-2001)
Manipur	0*	0	61.64	39.23
Goa	1.72	0	619.27	(-) 2.86
U.P.	10.29	16.79	21.14	17.97
Jharkhand	17.35	0	33.21	(-) 1.07**
West Bengal	30.56	11.14	40.58	17.1
Gujarat	30.91	60.86	36.5	17.41

Odisha	36.57	0	53.39	13.91
Chhatisgarh	39.46	5.48	63.07	((-) 12.83**
Madhya Pradesh	40.87	10.46	55.52	(-) 12.83
Sikkim	42.15	0	207.32	20
Karnataka	47.58	46.86	58.66	12.29
Uttarakhand	48.09	6.41	**	17.91**
Tripura	48.22	0	39.43	15.22
Haryana	51.63	65.74	132.09	20.73
J&K	54.9	0	209.12	30.34
Meghalaya	55.05	0	176.27	32.14
Maharashtra	55.37	13.42	77.92	15.38
Andhra Pradesh	58.77	41.86	30.72	13.62
Himachal Pradesh	63	0	391.33	16.6
Tamil Nadu	64.47	60.42	33.73	(-) 4.99
Assam	66.07	0	63.35	17.37
Rajasthan	66.7	86.44	124.79	27.64
Bihar	68.7	0	16.81	(-) 1.07
Punjab	72.22	81.16	77.19	12.96
Mizoram	79.61	0	435.58	12.5
Kerala	80.75	32.47	101.98	10.14
Nagaland	80.97	0	98.92	64
Arunachal Pradesh	81.29	0	553.57	8.75
All India/ All States	42.71	25.04	58.85	17.86

6. The standard explanations for the repeated increase in NC/PC habitations have limited validity. There is an explanatory gap that can only be accounted for by the institutional incentives spawned by the current system of inter governmental transfers that reward non performance while implicitly penalizing performance. These institutional incentives favour letting schemes decay and fall into disuse and account for a large chunk of 'slipback'. They also weigh against any attempt to secure locally accountable delivery systems through the 'demand driven approach' while traditional structures continue to cater to the difficult situations of problems of adequacy and quality.

7. Reforming this institutional structure to secure accountable delivery of water supply and not just a gale of infrastructure creation, destruction and recreation requires that in the first place the incentives offered by the largest funding window in the sector undergo alteration. State governments must seek performance measured in terms of service delivery indicators and not funds for asset creation. They should feel the need to ensure that local bodies are vested with this delivery function to ensure accountable delivery and that the existing delivery agencies are re-designed to make sure that this devolution is effective. The centrally sponsored NRDWP must be redesigned to incentivize States in this direction.

8. The experience with specific purpose transfer schemes has been disappointing in India. On the whole, the design parameters of traditional CSSs have generated the kind of perverse incentives that a principal: agent relationship is prone to in the absence of an ability to effect a change in agents or deliver a credible message of penalty for poor performance. Since 1999, a new generation of central transfer schemes have made an appearance. An analysis of the design of 10 of these schemes, shows that most of them continue to encourage a model of 'build, neglect, rebuild'. However, some of these schemes do reveal some positive features.

i) Financial penalty/incentive linked to clear, monitorable indicators of the desired outcome has the potential to deliver desired results and change the focus from asset creation to delivering services.

ii) Monitoring is most effective when linked to credible generation of data on simple indicators of performance.

iii) An one shot reward linked to a single evaluation, even by an external process, can be deceptive. Multi tranche rewards/penalties linked to monitoring of results on a regular basis is essential for sustainable results.

iv) Flexible funding allowing an interchange between different inputs (akin to block grants) has secured greater ownership by State governments.

9. A possible new design for a CSS in the rural drinking water sector could have the following features:

i) a normative, formula based block grant available to all States to spend on rural drinking water in a flexible mode and

ii) a performance based incentive to be secured only by States which do better on pre determined bench marks.

10. Performance rewards in the drinking water sector can be divided into two components. One component to gauge the extent to which delivery is making a different to people's quality of life. The performance reward for this can be based on independent annual surveys to gauge consumer satisfaction and the construction of an all States index to measure comparative performance. The second component can relate to the core logic of state intervention in drinking water – its link to health. Provision of safe drinking water should result in reduction in the incidence of water borne diseases. However, securing credible data on morbidity related to water borne diseases is still a tall order in India. The closest proxy data is country-wide extension of the data on health indicators that the NSSO is producing of focus States for the NRHM. This can form the basis for constructing a comparative index for all States and structuring an incentive on the same basis as a consumer satisfaction based incentive. A criticism against use of this proxy data can be that attributing changes in these indicators to drinking water alone will be erroneous. The best answer to this would be to create an incentive fund that puts together contributions from the central schemes in the drinking water, sanitation and health sectors to reward improved performance on core health indicators.

11. Bringing in a new design that eliminates discretion and is linked to performance, faces three sets of challenges. In the first place is the mindset and entrenched interest that has grown around traditional CSSs, both at Central and State level. At another level, the limitation that will result on the ability to play patron by the party in power at the Centre seeking to secure influence in specific States, is a major

stumbling block in a shift to transparent, performance based conditional transfer schemes. Finally, the growing strength of the 'entitlement' perspective in the last decade, represents a third challenge to the new approach. The logic of 'entitlements' means that CSSs must become vehicles for ensuring that States supply the centrally designed inputs. The entitlement viewpoint, in effect, runs counter to autonomy for States to deliver performance on outcome indicators in ways they deem appropriate and instead strengthens the 'agency' relationship of traditional CSSs.

12. Is there then no way to break this logjam? A genuine performance orientation needs to recognize the autonomous sphere of the States in decisions on the modes of implementation. Bringing this about is indeed a tall order. Possibly a more State dominated political combination at the Centre could offer an opportunity.

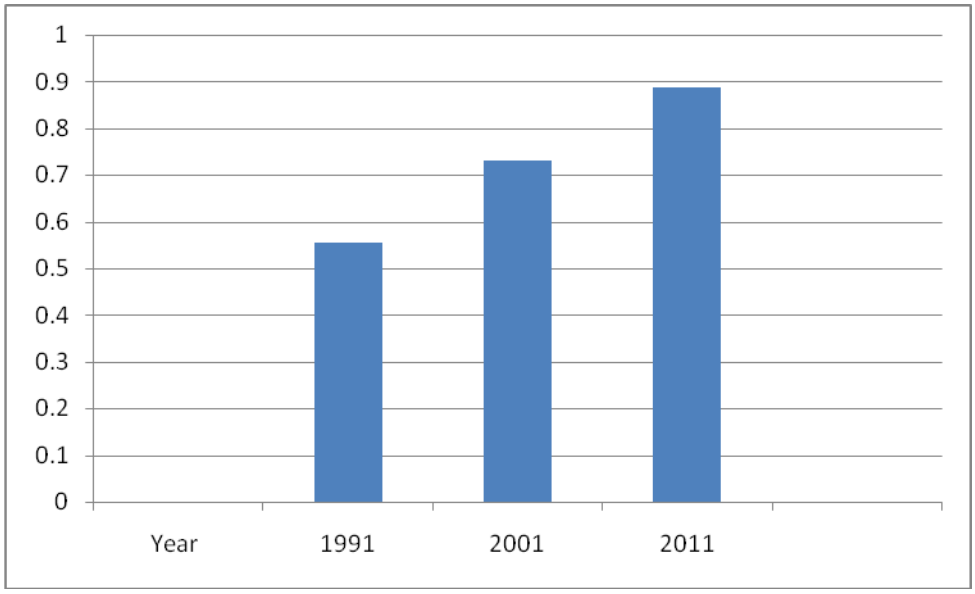
13. Meanwhile, there is need for more work to demonstrate that current solutions are feeding back into the loop and do not represent a break, from the expensive cycle of infrastructure creation, to accountable service delivery. The basic incentive structure of the stakeholders in the system has to be altered for sustainable change to have a chance.

I

An Elusive Goal

The recently released "Progress on Sanitation and Drinking Water: 2013 Update" prepared by the Joint Monitoring Programme (JMP) of the WHO – UNICEF notes that 89% of India's rural population now has access to an improved drinking water source[1], an improvement of 33% since 1995. The dicennial census of India brings out a similar picture. Rural households with access to safe drinking water constituted 88.74% in the 2011 census up from 73.2% in 2001 and 55.5% in 1991[2], an improvement of a little over 33% in two decades[3].

India: Proportion of Rural Households with Access to Safe Water



Source: Compiled from data on the Website of the Registrar General of India, Ministry of Home Affairs, Government of India.

[1] According to the JMP, an improved drinking water source is one that by the nature of its construction, adequately protects the source from outside contamination, particularly faecal matter.

[2] Availability of a tap from a piped water supply or to water from a tube well or handpump is designated as access to safe water in the census.

[3] Access to safe water is assumed to follow with an improved source unless there is evidence of chemical contamination. Pollution due to poor sanitation and waste disposal practices (with 615 million people estimated to be defecating in the open and many others failing to confine excreta safely), is not taken into account.

This impressive achievement implies that India will meet the Millennium Development Goal (MDG) for drinking water in 2015 and is on course to adopt the next generation of targets being proposed by the international community. Proposed definitions for the post 2015 period are looking at distinguishing between basic drinking water supply and intermediate drinking water supply at home. The basic drinking water supply goal should be use of an improved drinking water source within a 30 minute round trip collection time from the house; intermediate drinking water supply at home would require use of an improved water source on the premises, availability of water in acceptable quantities in at least 12 of the last 14 days and water quality meeting a standard of less than10 cfu (colony forming units) of E.Coli/100 ml[4]**.** Government of India's Department of Drinking Water Supply issued a framework for implementation of the newly launched "National Rural Drinking Water Development Programme" in August, 2010[5]. The programme proposes "a paradigm" shift in the targets to be set for access, adequacy and safety in making available drinking water to rural households. This is now the basis for the drinking water goals in the 12th Plan[6]. Installation of a water supply system in a habitation will constitute full coverage only when every household has access to potable water in sufficient quantity. The long held goal of 40 litres per capita per day (lpcd) will be replaced by "drinking water security for all in the community, recognizing the need to ensure that basic minimum requirement for drinking, cooking and other household needs including cattle, are met. Water for drinking and cooking shall be required to maintain quality as per prescribed BIS standards. The WHO Guidelines for Drinking Water Quality (2004) and Guidelines for safe use of waste water and grey water (2006) would also be adopted in pursuit of the safe water goal"[7].

[4] pp11, WHO. UNICEF 2013 update.
[5] A re-formulation of the earlier Accelerated Rural Water Supply Programme (ARWSP).
[6] pp 444, 12th Plan document.
[7] PP 2/3 of NRWDP. Guidelines on website of MDWS, Govt. of India.

Reaching the current levels of provision (which has led to even higher aspiration) has been the result of ever increasing investment over successive plan periods. By the end of the Eleventh Plan (31.3.2012), the Centre and the States had together spent Rs. 1,55,649 crore on rural drinking water. Plan period wise investment in the sector, from 1951 to 2012, is shown in the table below:

Table 1

Investment in Rural Drinking Water in India

Plan Period	**Investment made (Rs. in crore)**	
	Centre	States
First (1951-56)	0	3
Second (1956-61)	0	30
Third (1961-66)	0	48
Fourth (1969-74)	34	208
Fifth (1974-79)	157	348
Sixth (1980-85)	895	1,530
Seventh (1985-90)	1,906	2,471
Eighth (1992-97)	4,140	5,084
Ninth (1997-2002)	8,455	10,773
Tenth (2002-07)	16,254	15,102
Eleventh (2007-12)	39,211	49,000
Total	**71,052**	**84,597**

Source: Twelfth Five Year Plan pp. 300

Despite these investment levels and even as the Government sets more ambitious targets for the 12th Plan period, there is concern about serious issues that constrain adequate access to safe drinking water on a sustainable basis. The problem areas in rural drinking water are best captured by the fact that the goal of extending safe drinking water coverage to all of rural India seems to constantly float out of reach even as it appears to be almost within grasp. Even as government spend increases and targets are met, habitations keep 'slipping back' into a not covered (NC) or only partially covered (PC) category or end up with quality problems. When the first surveys were conducted in the 1960s, less than 1/3 of

India's rural population was considered to have inordinate problems of access or quality[8]. In 1972, 1, 50,000 revenue villages were identified as 'problem' villages out of 5, 80,000 villages. Of this, over 62% were covered by 1980. However, the number increased to 2,31,000 in a 1980 survey and despite a reported achievement that covered 83% of these problem villages by 1985, a fresh survey again reported over 1,61,122 problem villages. By 1994, only 70 uncovered villages were left but a fresh habitation level survey brought up 1,40,975 problem habitations. The 1994 survey shifted to habitations as a unit for measuring access and the numbers shot up again and have maintained an increasing trend since then. In successive Plans since the Ninth, the target has been to cover all habitations with access to 40 lpcd supply but in both the Tenth and the Eleventh Plans, the number of habitations to be reached, has been increasing. The table below captures this elusive nature of the goal of providing universal access to safe drinking water to rural India:

Table 2

The Elusive Nature of Universal Access to Rural Drinking Water to Rural India

Sr. No.	Period	Villages/ Habitations Covered	% of all villages/ Habitations with safe access (based on survey at the beginning of the period)	Balance problem settlements still left (based on latest survey for the end of the period)
1.	2.	3.	4.	5.
1.	1972-1980	94,000	90%	2,31,000
2.	1980-1985	1,92,000	90%	1,62,722
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5.	2000-2007	3,52,992	93%	7,98,967
6.	2007-2012	6,65,034	91%	

Source: Figures taken/computed from data given in Five Year Plan documents from the Sixth Five Year Plan to the Twelfth Five Year Plan.

[8] 6th Five Year Plan Chapter 13, "Housing, Urban Development and Water Supply" as available on Website of Planning of Commission of India.

Notes: 1. Figures at Sr.No.1, 2 and first four columns of Sr. No. 3 are of revenue villages. Column 5 of Sr.No.3 and Sr. No. 4, 5, 6 are of habitations.

2. In Column 3, Sr. No.4, the habitations covered are for the period 1997-2000 and do not include coverage of water quality affected habitations. In Column 3, Sr. No. 5, the habitations covered are for the period 2003-2007.

3. In Column 4, for Sr.No.1, 2 & 3, the %age is computed on the basis of 5, 80,000 revenue villages in the country. The provision of safe access in these periods is based on the understanding that other than identified problem villages, all other villages are safely covered by traditional sources. In Sr.No.4,5 and 6, the understanding has changed to a provision of improved access in all habitations and % age in column 4 is computed on the basis of 15,00,000 habitations in the country.

4. Survey data of left out /problem habitations/target habitations in 12th Plan not yet available.

What has caused this phenomenon of chasing a retreating goal? The generally accepted explanation is that problems related to source sustainability, system sustainability and increase in population have caused habitations to 'slip back' into not covered or partially covered or water quality affected status. Sources come under pressure with increased demand or because they dry up or yield inadequate discharge which often also result in water quality problems and systems fail due to poor maintenance of the schemes.

The Water Resources chapter of the Mid Term Appraisal of the Eleventh Five Year Plan points out that the growing dependence on groundwater for irrigation, "has taken the form of unsustainable extraction, which is lowering the water table and adversely impacting rural drinking water. Between 1995 and 2004, the proportion of unsafe districts (semi critical, critical and over exploited) grew from 9% to 31%, the proportion of area affected from 5% to 33% and the population affected from 7% to 35%[9]. Given the fact that area under canal irrigation has actually declined in the last decade (while net irrigated area has increased), reliance on groundwater has grown and the situation would have worsened since 2004[10].

[9] Mid Term Appraisal of the Eleventh Five Year Plan. PP 427 and 428.
[10] Mid Term Review of the Eleventh Five Year Plan, pp 431.

Extraction of groundwater for irrigation was a welcome trend when it gathered steam alongwith the Green Revolution. Water tables in the alluvial plains of northern India were high, technology was simple and relatively inexpensive, electricity supply from the new Bhakra Dam was abundant. Tube-wells enabled control over assured, timely irrigation at farm level. Over time, the un-certainty of timely supply from larger surface irrigation systems, established ground water extraction as a firm favourite. Politicians soon realized that assisting this trend would have appeal with the electorate. The exit to this individually preferred but collectively damaging option was, therefore, aided by the supply of free or highly subsidized electricity, even as water tables began to decline[11]. Now a vicious cycle has set in, which makes charging the farmers for electricity at higher rates ever more difficult. Lowering water levels mean more pumping and even higher electricity consumption in a situation in which even the recovery of the cost of current consumption levels of electricity at a realistic tariff would render agricultural operations uneconomic[12]. In rural drinking water, declining ground water levels have been considered an important factor in 'slip back' of habitation from a covered status to partially covered or uncovered given that 90% of drinking water needs are met by ground water. With falling ground water tables and extraction from deeper levels, serious issues of chemical pollution have emerged which are being exacerbated by the day, as States report an increasing number of water quality affected habitations[13]. According to DDWS, out of the 593 districts from which data is available, there are problems from fluoride in 203 districts, iron in 206 districts, salinity in 137 districts, nitrate in 109 districts and arsenic in 35 districts"[14].

System sustainability is considered to have suffered over time due to lack of attention to operation and maintenance (O&M) of water supply schemes. Successive five year plan documents have

[11] . Briscoe, John and Malik, RPS, "India's Water Economy: Bracing for a Turbulent Future" World Bank, OUP, 2006, pp 7/8
[12] . Ibid
[13] . Mid Term Appraisal, pp 429.
[14] . Mid Term Appraisal of the Eleventh Five year Plan, pp 429.

pointed out insufficient attention to O&M. The Tenth Five Year Plan document noted "More than 3.5 million handpumps and over 100,000 piped water supply schemes have been installed in the country under the Rural Water Supply Programme. The total estimated cost for operation and maintenance (O&M) of this, at the present value, would be around Rs. 2000 crore per year (10-15 per cent of the capital cost). A majority of the schemes remain non functional and many others become permanently defunct due to lack of proper maintenance and repair for want of funds. Most States face resource problems and, therefore, tend to neglect maintenance"[15].

The country's rural population has increased from 52.55 crore in 1981 to 83.3 crore in 2011 and this is seen as another reason for schemes declining to partially covered status when they are designed for a 40 lpcd consumption level.

[15] Tenth Five Year Plan, page 603-604

II

Official Policy

National policy on rural drinking water has seen three distinct phases since the beginning of the planning process in 1951. The period till 1972-73 (when the centrally sponsored Accelerated Rural Water Supply Programme was launched) was the first phase of very limited intervention. Table 1 in the preceding section clearly shows the insignificant nature of central investment in the sector in this period. This was followed till 1999 by a second phase in which the Centre began to support the goal of improved access to rural drinking water through dedicated financing to cover targets of problem settlements. This phase saw an increasing role being played by State engineering departments or boards which conceived and implemented most schemes. However, in time community participation came to be viewed as a critical factor in better design and maintenance. The third phase, which began in 1999 and continues till now, represents an attempt at introducing reform by asking States to bring in community participation in the design, construction and maintenance of some schemes while other schemes continue under the earlier model of delivery through State engineering departments or boards.

Independent India's concern for safe drinking water was largely an urban phenomenon in the first two decades of planning. A national drinking water supply programme was first launched in 1954 under the Ministry of Health with a predominantly urban focus. In rural areas, the national programme was confined to 'problem' villages where securing access to safe drinking water required a measure of technical skill. Emphasis was laid on areas which suffered from water scarcity and salinity and where water borne diseases were endemic[16]. Rural drinking water supply schemes were primarily taken up under programmes devoted to community and local development works and the welfare of backward classes. In the entire period from 1951-1974, the total investment in water supply by the Centre and all States put

[16] http://planningcommission.gov.in/plans/planrel/fiveyr/welcome.html; 4th Five Year Plan, Chapter 19.

together was about Rs. 855 crore of which less than 35% was in rural areas[17]. Rural water supply schemes were primarily conceived and implemented by development blocks and the formal civil engineering machinery (mostly the state Public Works Department) was not involved. Even in this period of limited intervention, when the targets were only a few problem villages, there was some concern about the maintenance of rural water supply schemes and the need to collect user charges from the beneficiaries of the service (as a way of financing maintenance costs)[18].

The second phase began with the launch of the Accelerated Rural Water Supply Programme (ARWSP) by the Centre in 1972-73. The ARWSP sought to demonstrate central concern for rural drinking water and leverage state plan funds for this purpose. It was part of a change in the design of central transfers to secure the participation of the States in the pursuit of centrally decided goals. Till then there was a fairly clear division of central transfers as either tax shares or grants based on Finance Commission recommendations or block grants to support the State Plans through the Planning Commission. While the Planning Commission exercised considerable influence on the priorities and sectoral allocations in the State Plans, specific purpose transfers were, up to the Fourth Five Year Plan, a limited phenomenon under central schemes. The early 1970s saw the addition of significant transfers as 'centrally sponsored schemes' (CSSs) relating to subjects in the state list of functions in the Constitution. It marked the introduction of a period in which the Centre increasingly assumed responsibility for most functions meant to be performed by States and through the process of approvals and sanctions for release of CSS funds, began to dictate the manner in which these responsibilities would be discharged. In rural drinking water, the concept of funding problem villages with more 'technical' requirements brought the state engineering departments, till then largely restricted to urban areas, into the rural sphere. Over the next decade, the state civil engineering departments came to form separate wings for water supply or became separate departments (Public Health Engineering Departments – PHEDs) or autonomous Boards. These agencies then specialized in the design and construction of water supply schemes funded through

[17] Ibid.
[18] Ibid

these central programmes. Over time they learnt to 'supply' engineering schemes to rural areas at the behest of the Centre and not necessarily deliver water on the demand of rural communities. In order to secure more funding, they needed to demonstrate both achievement of targets and a gap in meeting the objective of improved drinking water supply or to set higher objectives of adequate access. The cycle of targets, achievement, falling short of the goal and requiring fresh targets was inevitable even without the difficulties imposed by the parallel development of groundwater extraction and falling water tables. The major concern in this second period was setting and meeting targets of covering problem villages.

The Sixth Plan was launched after the declaration of the period 1981-90 as the International Drinking Water and Sanitation Decade. While the focus continued to be "problem villages", it now proposed extending coverage to all of them instead of the limited targets specified in earlier plan periods. (The number of problem villages had already increased from 1.50 lakh to 2.31 lakh in a 1980 survey). It also for the first time made a specific provision for other villages where existing sources might require augmentation or improvement. While seeking to extend the reach of official intervention in the provision of rural water supply, the document sought simple, even austere standards so that targets could be achieved within the available resources. The Sixth Plan document also made a more detailed acknowledgement of the problem of maintenance. It noted the role community involvement can play in catering to this need and implicitly in recovering operating expenses as user charges[19]. The commitment to a rapid scale up of efforts to reach the targets of the decade was exhibited in the launch of a National Rural Drinking Water Mission in 1986, later to be renamed the Rajiv Gandhi Rural Drinking Water Mission (RDWM). From Mission mode with an implicit sunset assumption, it was converted in the 1990s into a Department, in recognition perhaps of a problem that was here to stay.

The Seventh Plan prioritization of rural drinking water provisions was first for the 39,000 left out problem villages as per the 1980 survey which were still left to be covered, then problem villages identified later and finally an allocation for liberalized norms of supply so that services could be upgraded

[19] http://planningcommission.gov.in/plans/planrel/fiveyr/welcome.html;, Sixth Five Year Plan, Chapter 23.

by reducing the distance to an assured source. There was an assumption that the 'problem' had been virtually solved and it was time to move on to a higher level of service. Even as the Plan document reiterated the need for community involvement and cost recovery, it reduced its expectation to only partial recovery of maintenance expenses from full recovery of all operating expenses suggested in the earlier plan. Instead for the first time, central funding was allowed to be used for maintenance, by earmarking 10% of the allocation under the Minimum Needs Programme[20]. The issue of regulating ground water extraction was largely seen as a concern of the Ministry of Water Resources (which first formulated a model law for States to adopt in the 1970s). On the drinking water side, there was only an occasional exhortation to states to adopt such legislation.

Till 1986, the ARWSP was run with some basic guidelines on design criteria. Schemes were proposed for problem villages by the States, examined and then sanctioned in the water supply division of the rural development ministry. The funding was 50 per cent from the Centre and a matching contribution out of the MNP component of State Plans. The launching of the National Rural Drinking Water Mission saw the issue of detailed guidelines for implementation of ARWSP. These guidelines included enumeration of the allocation criteria for states to receive funding under AWRSP. These initially indicated weightage of 50% to rural population, 20% to area, 20% to poverty and 10% to spillover of uncovered problem villages of the 1980 survey[21]. The allocation criteria was subject to frequent changes thereafter although weightage to the proportion of rural population, poverty, etc. continued to be important while special problem areas (like arid, semiarid or hilly terrain) were allocated separate weightage. A significant change in this formulation came only after the start of the 'reform' phase of policy in 1999.

[20] http://planningcommission.gov.in/plans/planrel/fiveyr/welcome.html; Seventh Five Year Plan, (Vol.2), Chapter 12.

[21] D. O .letter No.Q-11011/3/86-PHE (RWS) dated 24th Feb., 1986 written by Sh. A.K. Rastogi, Joint Secretary (RE0 to the States.

Various official instructions issued to the States in this second phase of policy convey a flavour of the manner in which the ARWSP was run in this period. The Centre's perception of itself as a principal with the States in the role of implementing agents comes through strongly in the detailed guidelines on prioritizing schemes to be formulated and the control over sanctions. Meaningful delegations in this context occurred only in the 1990s. The Centre even dictated the equipment to be used and the manner of its usage and separately funded personnel which it felt States need to engage (e.g. hydro geologists and investigation cells). Even communication strategies, messages, schedules for campaigns and the funding pattern for these were laid down from Delhi[22].

The problems that a standard principal agent relationship confronts obviously occur in this situation. The agent's prime concern is to show adherence to the conditions laid down by the principal and secure funding. Instead of sustainable and adequate access to drinking water, the objective becomes highlighting the problem of access to secure more funds. The fact that PHEDs were asked to conduct the surveys that formed the basis of cataloging problem villages, meant that the very agency that has an interest in magnifying the problem was asked to determine its size. State and PHED incentives were further geared to 'spend' (and not necessarily deliver) by special incentives to States which spent earlier and faster[23].

The start of the third phase in the evolution of rural drinking water policy can be officially traced to the launch of the Sector Reform Programme (SRP) in pilot districts, in 1999. The background to this policy shift can be traced to a number of developments. In the late 1990s, official attention shifted from targeting revenue villages (as settlements to be covered) to habitations. By 1994, only 70 uncovered

[22] Various communications from the Centre to the states in this period detail such matters, examples include: letter of 31.01.1986 on training of drilling personnel, Inventory Management and Performance Monitoring of New Generation Rigs, letter of 28.03.1988 regarding strengthening of Existing Monitoring Cells and Investigation Units set up under centrally sponsored ARWSP, letter of 17.04.1995 on an IEC strategy for Awareness Creation in Water and Sanitation sector.

[23] D.O. letter No. Q-11016/42/84. PHE dated 18.08.1984 written by Ramesh Chandra. Secretary to the States on Additional Central Assistance as Grants to States on the basis of their Better Performance.

villages were reported as left out but a new survey revealed 1,40,975 problem habitations out of a total of about 15 lakh odd rural habitations. Even with this gap, this represented about 95% coverage. By the end of 1999-2000, the coverage was officially reported to be 95%. But questions were being posed about the accuracy of this achievement. The Mid Term Evaluation of the Ninth Five Year Plan pointed out, "surveys indicate acute hardship and quality problems in about half the habitations. Why this extraordinary discrepancy between government records and reality?"[24].

The response of the Department of Drinking Water Supply was that surveys were too small in size to draw generalized conclusions. In the Department's view, population increase and relocation of people leading to new habitations and non-sustainability of sources and systems due to a variety of reasons could cause re-emergence of un-covered /partially covered/quality problem habitations[25]. However, there was a realization that the non sustainability of sources and systems needed to be addressed. The policy response was segmented into three areas. Increase in source difficulties and water quality problems was seen as a consequence of depleting ground water levels due to irrigation demand which accounts for 90% of ground water drawal (drinking water uses only 3% of freshwater but 90% of this comes from below the ground). Additional pressure on sources was seen as coming from deforestation, lack of source protection and neglect of recharging and traditional water management strategies. System issues causing difficulties were laid at the door of poor design and construction and neglect of O&M. Ground water issues were to be tackled through introduction of appropriate regulatory mechanism and a call for an end to subsidies on electricity tariff for irrigation (This would obviously be in the domain of the Ministry of Water Resources and till such time as this was dealt with, drinking water policy would have to factor in additional dedicated funding for problem villages suffering from source and water quality problems). Appropriate inter departmental co-ordination, scheme guidelines and suitable provisions would cater to water shed management, afforestation and increased emphasis on

[24] Mid Term Evaluation of the Ninth Five Year Plan, pp 440.
[25] Ibid, pp 442.

conservation, recharging and rain water harvesting[26]. These were not new initiatives since calls for ending free electricity to agriculture and programmes on watershed development and better water resource management had been around for some time. To an extent, their linkage to drinking water was explicitly recognized in official policy documents in the 1990s. What was really new was the call for new practices in relation to the design, implementation and management of rural drinking water systems.

As mentioned earlier, Rural Drinking Water Supply has been delivered through State government departments at least since the inception of the ARWSP. In the 1970s and 1980s, the idea of promoting better financially accountability saw the creation of state Boards also as autonomous entities in some States[27]. But in essence the model of top down centralized delivery and management continued. This system, based on laid down per capita norms of water to be delivered to identified villages, through schemes designed, constructed and usually maintained by engineering departments, was categorized as a 'supply driven approach' that failed to involve communities. Through the 1980s and 1990s, a number of donor financed projects experimented with 'demand driven approaches' to bring community participation in the design, construction operation and maintenance of rural drinking water supply schemes. (The World Bank aided SWAJAL project in UP in the 1990s exemplified key features of such projects). The perceived success of these initiatives laid the framework for the launch of the Sector Reforms Programme (SRP).

The launch of a reform programme with an emphasis on involving local bodies and cost recovery through user charges levied by the community itself has to also be seen in the context of the 73rd Amendment of the Constitution and the reform imperative generated by fiscal difficulties and external pressure after the coming of liberalization in 1991. The Mid Term Review of the Ninth Plan notes that water supply is expected to be handed over to rural local bodies after the 73rd constitutional amendment

[26] Ibid, pp 450.
[27] Often encouraged under World Bank supported programmes.

and State Finance Commissions need to make financial provision for this purpose[28]. Successive Union Finance Commissions after the Tenth, have been asked to consider ways to strengthen decentralization by the states and the Twelfth Finance Commission made a special allocation for local bodies to be funded for the discharge of water supply and sanitation functions. This is a period when 'reform' is in the air. Externally supported reform schemes in specific States make an appearance in the late 1990s. At the central level, the SRP was the first of a number of reform cum performance related schemes introduced in the years that followed. At the larger level of State finances as a whole, the Medium Term Fiscal Reform Programme began in 2000-01, on the recommendations of the Eleventh Finance Commission. Prominent sectoral schemes included a reform of the Accelerated Irrigation Benefits Programme (AIBP) in 2001-02 requiring States to sign MoUs for full cost recovery of O&M within a certain number of years. The Accelerated Power Development and Reform Programme (APDRP) launched in 2002-03 made available funding only to States agreeing to undertake reform as per agreed milestones and narrowing the gap between cost incurred and revenue realized[29]. (In the decade, thereafter many other schemes have been floated and some of the important ones are discussed in Section IV).

Policy documents after 1999 have echoed both voices of continuity and change. Continuity was evident in a repetition of the targets and priorities established in an earlier era. The Tenth Plan much like the Seventh sought the highest priority for ensuring the 'not covered' habitations are provided with sustainable and stipulated supply of drinking water. Next would come partially covered with very low availability and severe water quality affected habitations. Then other partially covered or quality affected habitations would be covered, followed by those which are subsequently found to be experiencing difficulties. For States which achieved the 40 lpcd norm, a 55 lpcd norm could be set[30]. The Eleventh Plan targeted "clean drinking water for all by 2009 and ensure that there are no slip backs by the end of the

[28] Mid Term Evaluation of the Ninth Five Year Plan, pp 434-435.
[29] A review of these reform programmes is given in 'The Status of State Finances' Background Paper brought out by IFAD in October, 2003.
[30] Tenth Five Year Plan, pp 601-602

Eleventh Plan"[31]. The Twelfth Plan recognizes that past targets have not been achieved but sets itself a higher goal and specifies a movement from settlement to household level targets. "While the ultimate goal is to provide households with safe piped drinking water supply at the rate of 70 lpcd, considering that 40 lpcd has been the norm over the last 40 years and there is still a large population uncovered with this level, as an interim measure the goal has been kept at 55 lpcd for the Twelfth Plan"[32].

Change emerges in the detailed analysis of the rural drinking water situation in the mid term review of the Ninth Five year Plan. This discussion enumerated the following reasons for the phenomenon of constantly re-emerging gaps and the policy change required:

"1. Fast depletion of groundwater level, which also increases incidence of quality problems of Arsenic and Fluoride.

2. Sources go dry and defunct due to deforestation and lack of protection

3. Heavy emphasis on new construction and little attention to maintenance

4. Poor quality of construction

5. Non involvement of people in design as well as operations and maintenance

6. No recharging efforts undertaken particularly due to lack of inter departmental coordination

7. Neglect of traditional water management strategies

It is obvious that the past strategy of pumping money into this sector without looking at policy and institutional issues is not going to work. What we require is:

1. Restrictions on withdrawal of groundwater.
2. People's control over management of water supply scheme.
3. Water to be managed as an economic asset rather than a free commodity

[31] Eleventh Five Year Plan, pp 165
[32] Twelfth Five Year Plan, pp 301

4. Increased attention towards recharge of groundwater through afforestation and watershed development programmes"[33].

The document calls for measures to regulate the extraction of groundwater, recharge through watershed development and use of traditional technologies for rain water harvesting to address source sustainability issues. More significant is the attention it devotes to system sustainability and the necessity of people's participation for this purpose.

"The Engineering Departments in-charge of water supply had in the past concentrated their attention on new construction and there was hardly any people's participation in maintenance and operation of water supply schemes. Water is being perceived by the rural public as a social right to be provided free by the Government rather than as a scarce resource which must be managed locally as an economic asset in order to ensure its effective use. The present pattern is that systems are designed and executed by the Department and imposed on end-users, even when on paper these are transferred to the local Panchayats. Since the guiding principle for planning is that the Government will provide a minimum supply of 40 lpcd and make it free, there is no attempt to ascertain demand or to respond to demand for higher (or even lower) service levels. As such, planning is not done on the basis of demand and does not take into account user preferences (and willingness to pay) for different service levels nor future demand from increasing incomes and expectations. The experience has been that Panchayats are unwilling to take on the responsibility for operating and maintaining them. However, State Governments have no effective machinery at the village level to maintain such works. The system, therefore, requires a radical change. Rather than being supply driven, it has to be demand driven and has also take into account user preferences. A great deal of time should be spent with the communities so that user preferences are taken into account[34].

[33] Mid Term Review of Ninth Five Year Plan, pp 446.
[34] Ibid, pp 447-448.

The introduction of the SRP is noted approvingly and there is optimism about its spread beyond the initially selected 58 districts[35]. All this sounded extraordinarily radical but it was not necessarily translated into action.

The manner in which the ARWSP has been adapted since the introduction of the SRP in 1999 and the language of plan documents after the Tenth, bear witness to an urge to somehow show adherence to reform and the participatory principle and at the same time allow the central vision of being the key benefactor in the sector to remain pre-eminent. The SRP itself was a component of the ARWSP with 20% of the overall allocation reserved for funding of schemes in pilot districts which would be conceived, designed and implemented with community participation. The community would be responsible for 10% of O&M expenses. In 2002, the SRP was expanded as 'Swajaldhara' to include schemes in any habitation (and not just pilot districts) where these principles were accepted.

Salient features of SRP / Swajaldhara

#Communities to contribute 10% of capital cost and take full responsibility for O&M.

#Communities to exercise choice in scheme selection and mode of execution.

#Allocation for 'software activities' to build awareness of reform principles and to develop capacity in communities to make informed choices in scheme related issues and in formulating O&M arrangements.

#Funds for scheme execution to flow directly to GP/ community from the District Water and Sanitation Missions envisaged under the programme.

The balance 80% of ARWSP allocation continued to flow to States on the basis of criteria that included rural population, and special category areas (HADP/DDP/DPAP Special Category Hill States) as

[35] Ibid, pp 448.

earlier with additional amounts for overall water resource availability and number of quality problem habitations. Still there was a certain pressure to try and reform the entire sector till 2004[36].

The fervor for reform abated thereafter. Fiscal pressures eased, with the economy witnessing a period of exceptional growth. From 2005, the launch of 'Bharat Nirman', the central initiative for capital expenditure in rural India to meet centrally determined goals in various sectors including drinking water, ran counter to the demand driven principles of reform.

The Tenth Five Year Plan echoes this change of stance. While it continues to emphasize the need for a demand driven participatory approach to be put in place and desires that "PRIs should be the key institutions for the convergence of drinking water supply programmes at the ground level"[37], it mentions that even as the participatory approach must be pursued seriously, the government had to be responsible for providing access to all problem habitations. This attempt at harmonizing 'demand' and 'supply' approaches is also visible in the succeeding Eleventh and Twelfth Plan documents.

The mellowing of the reform imperative is even more evident once the ARWSP is reincarnated as the NRDWP in 2010. The Swajaldhara allocation of 20%, (already rechristened as the sustainability component in the Eleventh Plan), is reduced to 10% in new guidelines issues in 2012[38]. The perception that state expenditure on maintenance is inadequate and must be buttressed by the Centre also reasserts itself by securing an enhanced 15% allocation for O&M in the NRDWP against the earlier 10%. In effect, since 1999, official policy has flirted with a change of tack but this impulse appears to be waning.

[36] The DDWS unveiled a detailed Memorandum of Understanding (MoU) for States to sign in order to avail of enhanced funding under AWRSP. The draft MoU required a road map with appropriate milestones to decentralize service delivery with appropriate roles for the State Governments and PRIs as well as a restructuring of the engineering departments.

[37] Tenth Five Year Plan, pp 602

[38] D.O. letter No. G-11015/2/2012-Water II dated 03.07.2012 written by T.M.Vijay Bhaskar, Joint Secretary to the States.

III

The Critical Gap

The last section brought out the manner in which official policy has evolved in the rural drinking water sector. From a purely supply side perspective of delivering water supply schemes, it has sought to bring into the envelope community participation where demand is exhibited through partial capital cost sharing and full responsibility for operation and maintenance while the state steps in to make up the financing gap and deliver associated capacity shortfalls. The continuation of supply side intervention is justified on grounds of source and quality considerations which usually require complex solutions with larger schemes. These are considered beyond the capacity of small communities (and local bodies) to handle both from the perspective of financial requirement and associated O&M expenses as well the technical and managerial aspect. Since its introduction, the demand driven approach has made limited headway. Since an important reason for 'slip-back' is said to be problems of source and water quality, coverage targets require that more complex schemes have to be designed to cater to more distant and difficult sources. Consequently pressure to squeeze the quota for the sustainability component of NRWDP has seen this being reduced to 10% of the total allocation.

The demand driven approach draws its logic not merely from a romantic notion of letting the community decide. At the core, it is about strengthening accountability by making the community responsible for its own actions. For reform adherents, accountability is inextricably linked to cost recovery. The most important feature of the approach is therefore making the community responsible for all O&M and at least partial upfront capital investment. System sustainability is expected to be taken care of once the community is responsible for paying for its own water supply. However, reform adherents (like the World Bank) also buy into the argument that source sustainability and water quality can impose huge technical and financial requirements beyond the reach of the community. Therefore, a segmentation of the manner in which this function is performed is necessary. While communities should be expected to

take responsibility for the simpler water supply schemes which are single village or have an easily accessible source, more complex situations imposed by distance or strata or requiring large multi village schemes are best handled by engineering departments for the moment. As the advantages of the demand driven approach become evident and the technical capacities at lower level are built up, the ambit of decentralized community based ownership will expand and become dominant in the sector. Reform adherents, therefore, also see merit in efforts like change management where the engineering departments undergo a change of heart and become agents offering technical advice and capacity support to the community. Implicit in this conceptualization is the assumption that the larger issue of source sustainability and quality imposed by excessive ground water drawal, will be resolved only when larger, sector wide water reform and even more important, power sector reform takes place.

This vision of change is at best based on hope since the dimensions of the problem make it inevitable that the sector pursue a parallel approach to service delivery for the foreseeable future. In fact, a 'fully reformed' sector is not on the horizon and the pursuit of a limited target is justified by the argument that there is no other option. A more in depth analysis of the assumptions and logic of the current approach to reform, reveals a critical gap in understanding. When this is bridged, an alternative approach, to financing rural drinking water and the elusive nature of the goal of providing safe drinking water to rural India, could perhaps emerge.

The constant recurrence of problem habitations is laid at the door of three main causes: increasing problems of source sustainability, failure to maintain water supply systems and increase in rural population. Excessive ground water drawal which mainly causes problems of source sustainability and water quality is the result of irrigation demands and therefore, drinking water policy can only seek to ameliorate its negative impact by providing for greater investment in fresh asset creation. Population growth is also an exogenous factor. Only improved maintenance of systems can be addressed by drinking water policy. This understanding has been the basis of segregating difficult areas for funding through supply of schemes from above while bringing in a sustainability component that would address other

situations in a ‘demand’ driven, community responsive, mode. If this explanation for the recurrence of problem habitations were to prove questionable, then the institutional incentives favouring a repeated declaration of an increase in problem habitations (mentioned in the previous section) would gain in explanatory power and there would be a case for intervention through a change in drinking water policy so that these incentives are altered. This section begins with an exploration of this issue. It goes on to make the point that a segmented approach (even if interest in it was not already waning) is unlikely to make much headway in an overall environment dominated by the traditional institutional structure and incentives. Central policy must address the key impacting variable, the scheme of inter governmental transfer in rural drinking water, if there is to be any possibility of change on the ground.

There is no segregated data on the extent to which lack of source sustainability, system sustainability or increase in rural population have resulted in an increase in NC/PC habitations. It is generally accepted though that source sustainability is primarily a consequence of declining ground water levels and system sustainability has suffered due to in-adequate maintenance resulting from paucity in funding. It is taken for granted that rural population has grown and reduced per capita water availability through systems already constructed. It would be logical to presume that in States where ground water stress is more evident, maintenance expenditure is low and the growth of rural population is high, the extent of NC/PC habitations would be higher than in States where the situation is the reverse of this. Overall, for all States, the extent of NC/PC habitations should be explained by evidence of ground water stress, inadequate maintenance and a high rate of rural population growth. In order to see how far this hypothesis is borne out, four sets of data are presented in the table below for all States. Column 1 contains the percentage of NC/PC habitations in total habitations reported by States in the 2003 habitation survey. (Data from this survey is being used since it is comprehensive and readily available on the web). Column 2 is a computation of the percentage of blocks (in some cases talukas or mandals) to the total blocks in each State that have been classified as semi-critical, critical or over exploited from a ground water perspective by the Central Ground Water Board. Column 3 is the annual per capita maintenance

expenditure on drinking water in each State (average of four years from 2000 to 2004) compiled from State Finance Accounts. Column 4 is the percentage change in rural population in each State in the period 1991-2001.

Table 3

Habitation Survey 2003, Ground water stress, Maintenance Expenditure and Rural Population Growth

State	%age of habitations with inadequate access to drinking water	(%age of blocks / taluks /mandals/ showing Ground Water stress)	(Annual Per capita Maintenance Expenditure)	%age change in Rural population (1991-2001)
Manipur	0*	0	61.64	39.23
Goa	1.72	0	619.27	(-) 2.86
U.P.	10.29	16.79	21.14	17.97
Jharkhand	17.35	0	33.21	(-) 1.07**
West Bengal	30.56	11.14	40.58	17.1
Gujarat	30.91	60.86	36.5	17.41
Odisha	36.57	0	53.39	13.91
Chhatisgarh	39.46	5.48	63.07	(-) 12.83**
Madhya Pradesh	40.87	10.46	55.52	(-) 12.83
Sikkim	42.15	0	207.32	20
Karnataka	47.58	46.86	58.66	12.29
Uttarakhand	48.09	6.41	**	17.91**
Tripura	48.22	0	39.43	15.22
Haryana	51.63	65.74	132.09	20.73
J&K	54.9	0	209.12	30.34
Meghalaya	55.05	0	176.27	32.14
Maharashtra	55.37	13.42	77.92	15.38
Andhra Pradesh	58.77	41.86	30.72	13.62
Himachal Pradesh	63	0	391.33	16.6
Tamil Nadu	64.47	60.42	33.73	(-) 4.99
Assam	66.07	0	63.35	17.37
Rajasthan	66.7	86.44	124.79	27.64
Bihar	68.7	0	16.81	(-) 1.07
Punjab	72.22	81.16	77.19	12.96
Mizoram	79.61	0	435.58	12.5
Kerala	80.75	32.47	101.98	10.14
Nagaland	80.97	0	98.92	64

Arunachal Pradesh	81.29	0	553.57	8.75
All India/ All States	42.71	25.04	58.85	17.86

*not covered in habitation survey 2003

** not available and for Chhattisgarh and Jharkhand data is average of 2 years only.
* ** In these new States data taken to be same as parent States

A visual analysis of the information in the table brings out the following:

i) Only one state, Goa exhibits a consistency with the hypothesis that lower NC/PC habitations are explained low ground water stress, high maintenance expenditure and low rural population growth or the converse that high NC/PC habitations are caused by high groundwater stress, low maintenance expenditure and high rural population growth.

ii) On the other hand, as many as five States (Himachal Pradesh, Assam, Mizoram, Arunachal Pradesh and Maharashtra) bring up completely opposite results with little or no groundwater stress, high maintenance expenditure and lower than mean rural population growth but much higher than the all India NC/PC habitation percentage.

iii) In three other States (Odisha, Chhattisgarh and MP), the percentage of NC/PC habitations is close to the all India proportion while the ground water stress is negligible, the maintenance expenditure near or more than the mean and the rural population growth negative or lower than the all India average.

iv) In four States (Sikkim, J&K, Meghalaya and Nagaland), the percentage of NC/PC habitations is more than the all India proportion, while there is no ground water stress level, maintenance expenditure is significantly higher than the mean and only the rural population growth is higher than the country average.

v) In four States (Tripura, Bihar, Jharkhand and West Bengal), there is little or no ground water stress and low to negative rural population growth, only low maintenance expenditure has explanatory value for the occurrence of NC/PC habitations.

vi) In the case of Kerala, ground water stress is somewhat higher than the all India figure but maintenance expenditure is significantly higher and rural population growth much lower than the India figures. However, NC/PC habitations are almost twice the all India proportion.

vii) In the case of Gujarat, despite high ground water stress, low maintenance expenditure and near average rural population growth, the NC/PC habitation occurrence is well below the all India proportion.

viii) In the case of UP, there is some ground water stress, very low maintenance expenditure and rural population growth marginally higher than the all India figure and yet NC/PC habitations are a very low percentage.

ix) Only in six States (Andhra Pradesh, Karnataka, Tamil Nadu, Haryana, Punjab and Rajasthan) is a high incidence of NC/PC habitations related to high ground water stress levels and either low maintenance expenditure or high rural population growth.

x) Special category States (highly dependent on central funding) on the whole appear to exhibit virtually no ground water stress, higher maintenance expenditure levels and also a high level of NC/PC habitations.

The implication is obvious. The explanatory power of the accepted causes of more NC/PC habitations is weak. Regression analysis of the entire data set treating the NC/PC habitation percentage as a dependent variable and the other three as independent variables to explain the dependent variable, bring out an explanatory value of less than 9%. The significance of occurrence is so low as to render the hypothesis null.

Anecdotal evidence explains why none of the generally accepted causes for the occurrence of NC/PC habitations appear to suffice. Availability of plan funds (under the main financing window, the ARWSP) is linked to sanction of projects relating to NC/PC habitations. The field level staff must, therefore, show increased occurrence in order to have more money to spend and keep the locally powerful politicians (who can affect their transfer /posting) on their right side. The politicians obviously prefer greater expenditure in their area and also being able to announce new schemes in order to meet local aspirations for water supply instead of only managing with existing schemes. One anomaly remains: how can higher NC/PC habitations be exhibited when ground water levels or population growth does not justify an increase and maintenance expenditure is also high (meaning, therefore, that existing water supply systems should be well looked after)? The explanation lies in the fact that the high expenditure charged to maintenance is not necessarily used to keep schemes in running order. It is often being spent on providing employment to an inordinately large number of persons, unrelated to actual requirement. Specially in the special category hill States which exhibit the highest per capita maintenance expenditure, this meets a prime political economy objective of providing employment[39], even while the principle of 'Build, Neglect and Rebuild' is observed[40]. In such a situation increase in maintenance funding does not mean more functional schemes but possibly only more unproductive employment.

The preceding discussion shows how the standard explanations for the repeated increase in NC/PC habitations have limited validity. There is an explanatory gap that can only be accounted for by the institutional incentives spawned by the current system of inter governmental transfers that reward non performance while implicitly penalizing performance. These institutional incentives favour letting schemes decay and fall into disuse and account for a large chunk of 'slipback'. They also weigh against any attempt to secure locally accountable delivery systems through the 'demand driven approach' while traditional structures continue to cater to the difficult situations of problems of adequacy and quality.

[39] Sanan, Deepak, "Delivering public services in Himachal Pradesh: Is the success sustainable"? Economic and Political Weekly, Vol. XXXIX No.9, Feb. 28-March 5, 2004.

[40] Briscoe and Malik, pp 28 mentions this as a description for the prevalent norm in the water sector used by Nirmal Mohanty in his back ground paper for their report.

The existing institutional structure to deliver Rural Drinking Water in India is broadly encapsulated in the following table:

Table 4

Institutional Structure for Delivery of Rural Drinking Water in India

Sr. No.	Institutional Structure	Presence
1.	Both Capital & O&M responsibilities with State Government PHED/Board.	All small/special category states and many major states like Punjab, Haryana, Odisha, Assam, Rajasthan,etc.
2.	Capital Cost with State Engineering Department/Board and O&M with various PRI levels.	Kerala, Tamil Nadu, West Bengal, Andhra Pradesh.
3.	Capital Cost responsibility with Zilla Parishads and O&M with GPs.	Karnataka, Maharashtra, Gujarat.
4.	Capital cost & O&M responsibilities with local government / communities.	SRP/ Swjaldhara / sustainability component of ARWSP/NRDWP and some donor projects in various States

The perceptions and incentives guiding the behaviour of the key stakeholders in this structure are described below:

1. State Governments

Water is seen as an essential social good that must be made available by the State government. There is an unwillingness to charge an economic cost for this service which is delivered directly through a State agency in most States. Devolution of this function to local bodies has been minimal. Local bodies are not trusted, except in a few stray instances, to deliver this service. The perception that local bodies

lack the technical ability and orientation to actually deliver these services is strengthened by the presence of large PHEDs/Boards, which need to be given work. State Governments feel it is their responsibility to step in and make water available wherever there is even a temporary shortage and the responsibility is devolved to local bodies. The overall outlook on government intervention in development is guided by a view that investment is the chief constraint and success in implementation is gauged through expenditure monitoring. The requirements on overall water resource management, regulation and restructuring issues are poorly articulated since the focus of the State governments is on securing funds under central programmes.

2. PHEDs/Boards

They are funded through direct budgetary outgo or grants or government guaranteed debt and have little incentive to favour cost effectiveness or consider user interest. They have traditionally favoured large, capital intensive projects and sought engineering rather than participatory solutions to issues of access and coverage. Any attempt to change their primary role in capital investment is obviously viewed as a threat to their existence. They are, therefore, inimical to decentralization. They usually combine operation and regulation and the latter function obviously takes a backseat. They are the main vehicle for chasing the Stage government goal of increased funding under central programmes in the drinking water sector.

3. Rural Local Bodies

In the present dispensation, district and taluka/block level PRIs have little functional role in the water and sanitation sector except in States like Maharashtra. These upper tier PRIs would obviously like a larger role in capital investment (through state funding) and to have in place their own engineering set up. They would also prefer that any assistance to the Gram Panchayats (GPs) be routed through them so

that they can mimic the patronage dispensation that occurs at the State level. Gram Panchayats in many States have been vested with O&M responsibility but in practice this duty is often not discharged by them. In many cases, schemes implemented by PHEDs/Boards are not taken over. In other cases where electricity bills related to pumping stations are presented to them, they remain unpaid. Since State governments consider supply of water an essential service, GPs are aware that State governments will not effectively enforce their responsibility. Moreover, since GPs often have no role in scheme design and execution, they have little sense of ownership with regard to the schemes. Effective generation of demand and capacity building by NGOs have in some instances, resulted in local bodies dealing with issues of environmental sanitation, regulation and even overall water resource management. These however, are isolated examples of success and in the prevailing system, their long term sustainability is open to question[41].

4. Rural Communities/Users

Water supply is seen as a government responsibility. However, in case of necessity where alternatives are limited, communities and users are willing to make contributions to the capital cost of schemes seeking to extract ground water or bring surface water from some distance. They may even agree to undertake O&M although the latter agreement is usually considered only a formality given that in reality, government, in some form or the other, undertakes O&M of all water supply schemes.

Given this incentive structure, the limited demand driven attempts through SRP/ Swajaldhara/ sustainability allocations have always encountered the following problem areas:

[41] "The Best Laid Plans…..Revisiting Community Based Rural Water Supply Projects in Uttar Pradesh", Field Note WSP-SA, April, 2002.

- The reform approach of community ownership and participation in funding and O&M is expected of new schemes under the SRP/Swajaldhara/sustainability component. However, existing schemes continue under the old pattern in adjoining areas and even most new schemes are covered under the traditional funding arrangements with no capital cost contribution or O&M responsibility being cast on users. Convincing users to adopt the new umbrella is, therefore, often difficult. Even where demand is sufficiently pressing to ensure the initial contributions are made, the undertaking on O&M is usually superficial. There is an assumption that this responsibility will in due course be borne in much the same way as in the case of other existing schemes.

- The mantra of enhancing coverage (in terms of reaching habitations listed as PC/NC) often dictates decisions on schemes to be taken up under reform. These are often technically or financially most difficult and therefore the risk of failure associated with them is higher.

- In many cases, implementing agencies continue to be the same as under the traditional approach. They often attempt only a cosmetic packaging to meet the new guidelines while adhering to the old formula and pressure from all key stakeholders favours this approach.

- Even where new decision making structures have been effectively created at the district level, there is often insufficient understanding of the task and little support available locally to implement the new approach (absence of capacity to create capacity).

- Existing rules and procedures and available capacity often do not favour a meaningful local government role or do not offer the flexibility to forge appropriate community and local government links.

- Seeking new implementation modes means rendering existing structures redundant. This creates resistance from an entrenched interest and the need to find ways to deal with this redundancy in an acceptable manner.

- Both at the Centre and at the State level, there is usually insufficient ownership and understanding of the various difficulties associated with ensuring the success of these demand driven initiatives and of capacity to address them. There is also the tendency to measure success in terms of expenditure.

In effect, the perceptions/incentives guiding key stakeholders have tended to derail the demand responsive initiatives and push its implementation into one or the other of larger, existing institutional models. By and large, SRP / Swajaldhara sustainability has actually been implemented by PHEDs/ Boards continuing to take all decisions. Community involvement has usually been limited to 10% capital cost contribution often as labour and sometimes even this may be done by some donors or contractors. In a limited number of cases, district water supply missions or District Panchayats have managed implementation with community based user groups organized as Village Water and Sanitation Committees either as societies on their own or linked to Gram Panchayats.

Overall, the efforts have been small and expenditure even less than the allocations. Sustainability of these arrangements over a long term is clearly questionable. This experience with reform attempts shows that sustainable delivery of adequate and safe water requires a fundamentally new approach. It requires a comprehensive review of roles and responsibilities in the sector so that the perceptions/incentives guiding key stakeholders undergo a change. A possible model of functional assignment in line with this understanding would involve the following roles and responsibilities for the different stakeholders discussed earlier.

State Governments:

i) Devising and helping to implement an appropriate legal/regulatory framework for water resource management, ground water exploitation and water quality issues.

ii) Appropriate statutory framework for clear revenue and expenditure assignment to urban and rural local bodies with regard to water and sanitation delivery and other local public/merit goods.

iii) Appropriate financial devolution to local bodies on a normative basis to assist in the devolved functions, including O&M in the water and sanitation sector.

iv) Conveying of a clear message of no bailout in case of failure to perform the responsibilities devolved to local bodies from the resources available through normative transfers and own revenues.

PHED/Water Board:

No longer one or more large organization of the State Government responsible for planning, design, execution and often the maintenance of schemes, as well as regulatory issues. Instead broken up into separate focused entities for various functions and responding to interests of concerned clients. One component could assist State government in different regulatory issues. Another component could be formed into an entity bidding for contracts for capital and O&M works to be awarded by local bodies. A third component could be an entity offering consultancy services to assist local bodies in the performance of contracting/appraisal functions. An alternate mode of splitting up the implementing component could be in the shape of region based entities owned by the local bodies they service.

Rural Local Bodies:

In a situation of a single water supply scheme serving the whole or part of a Gram Panchayat, the overall responsibility for capital cost, O&M and tariffs for the entire scheme would be vested in the Gram Panchayat. In the case of a scheme serving more than one Panchayat, the responsibility for bulk supply

could vest in a higher level Panchayati Raj body or the bulk supply could be jointly owned by beneficiary Panchayats. The actual operation and management of schemes could be with communities or with contracted entities including the private sector. In addition, the higher tier of PRIs could have regulatory responsibilities with regard to water quality, ground water extraction and water resource management devolved/delegated to them by the State Government.

Communities:

Community involvement in decision making on capital investment as well as O&M issues and management by them wherever communities/citizen groups/ neighbourhood associations, etc. are willing to take up the responsibility.

Reforming this institutional structure to secure accountable delivery of water supply and not just a gale of infrastructure creation, destruction and recreation requires that in the first place the incentives offered by the largest funding window in the sector undergo alteration. State governments must seek performance measured in terms of service delivery indicators and not funds for asset creation. They should feel the need to ensure that local bodies are vested with this delivery function to ensure accountable delivery and that the existing delivery agencies are re-designed to make sure that this devolution is effective. The centrally sponsored NRDWP must be redesigned to incentivize States in this direction.

Overall, Government of India needs to put in place a well-defined and clear framework of fiscal federalism (within the Constitutional parameters) so that States have better incentives to deliver on functions that are their responsibilities rather than acting as agents of the Centre. This involves, among other things, a complete overhaul of centrally sponsored schemes to both limit their number and shift them from a supply driven, investment mode to demand driven, performance linked designs. Specifically, in the water and sanitation sector, schemes like the NRDWP would have to be redesigned and allocations linked to a combination of transparent norms and monitorable outcome indicators.

IV

Reform of the NRDWP

The last section concluded that the nature of central transfers and in particular the central scheme of NRDWP must change, if the constant pursuit of asset creation is to come to a halt and real reform in the delivery of water supply is to occur. What kind of design is likely to offer better incentives for this to happen? This section begins with a review of general principles advocated for conditional or specific purpose transfer schemes to achieve better outcomes. It goes on to look at the Indian experience in general and consider any positive lessons that can be gleaned for the water sector. Finally, it offers a possible design for a reformed NDRWP that may make sense in the Indian context.

In the literature on specific purpose or conditional transfers from central to sub national units, there is a stress on a number of factors to ensure that desired objectives are actually advanced and the transfers do not result in redundant expenditure or even worse generate adverse consequences with regard to both performance and fiscal stability. Foremost, any scheme of inter-government transfers should be seen as fair and transparent, conform to the requirement of a hard budget constraint and minimize creation of any moral hazard. In general, to ensure adherence to these precepts, the following cautions are advocated.

i) Conditional or specific purpose grants should not attempt to tackle a large number of areas. They should be a last resort to meet objectives unlikely to be taken up by sub-national governments due to the presence of externalities or because of paucity of resources that cannot be mitigated through normal transfers. “A proliferation of conditional and

performance linked special purpose grants is likely to generate confusion and pro forma fulfillment of the needed criteria."[42].

ii) Allocation criteria can either be formula driven or competitive or a combination of both, depending on the objectives sought to be achieved. But in all instances they should be transparent and not amenable to manipulation. Dilution of these requirements in formulation or implementation can render them ineffectual in securing performance or reduce them to vehicles for dispensing patronage. Formula driven transfers are most likely to meet the requirements of transparency and a hard budget constraint. However, where objectives require that appropriate proposals for funding should be received in a competitive mould, it is essential that both criteria as well as systems of evaluating proposals meet the conditions of transparency and fairness. In the absence of these requisites, formula based transfers may be preferable.

iii) The design of conditional grants should keep in view capacity to monitor and manage at the central level. Objectives should be clearly spelt out, be capable of being monitored and non-performance should invite the possibility of sanctions. In the absence of these features in the design, even conditional transfers based on transparent formula can become rights, which sub national units are entitled to regardless of attached conditions rendering issues of performance secondary and linking drawals to expenditure alone.

iv) Specific purpose grants must contain sunset clauses to create effective incentives for performance. In their absence, there is a clear incentive to under perform in order to obtain a larger amount over time.

[42] Ahmad Ehtisham and Jon Craig, 1997, 'Intergovernmental Transfers' in Teresa Ter-Minassian, ed. Fiscal Federalism in Theory and Practice, IMF, 1997, Pp 87-88

Table 5

Design Principles for Conditional Transfers

Design Issue	Principle
Type of Transfer	Block transfers for pursuing general developmental goals where issues of spillovers and externalities are limited and allowing scope for innovation and experimentation desirable. Non-matching transfers to pursue more specific objectives while matching transfers should be restricted to situations where not only spillovers are significant but resources of recipient units are required to be co-opted.
Allocation criteria	Transparent formula based equitable distribution for developmental goals and competitive incentives for more specific objectives
Operational Guidelines	Simple, outcome oriented and not process focused
Monitoring Arrangements	Insulated from patronage based pressures as far as possible and with a capacity to gauge outputs linked to desired outcomes rather than process oriented expenditure monitoring
Penal Provision	Effective by linking to outputs and a sunset clause

India presents a case of large scale use of specific purpose or conditional transfers from the Centre to the States. Surprisingly though academic interest in the issues related to the design of specific purpose transfers (Centrally Sponsored Schemes or CSSs) has been limited. In the literature on inter-governmental transfers in India, the predominant debate has been on the extent to which vertical transfers have been fair to States and horizontal transfers have secured the goal of equity and balanced regional development. On the whole, a conceptual framework has been lacking. Analysis of Finance Commission transfers has to an extent focussed on the pitfalls of a gap filling approach in promoting

perverse incentives[43] but in the main the debate has been confined to the Centre versus States or inter-se States issues[44]. Specific purpose transfers have often been commented on under the general rubric of discretionary transfers and been criticized for being excessive, encroaching on the States' domain and distorting expenditure priorities of the States[45]. Attention in official circles has also usually been focused only on the issue of reducing the number of CSSs[46].

A study on fund flow under seventeen centrally sponsored / central schemes commissioned by the Planning Commission concluded in 2003 that in general, CSSs in India have traditionally exhibited negative features in relation to all the design principles enumerated earlier. In summarizing the incentives exhibited by these schemes, the study concluded:

> "All schemes exhibit an expenditure based focus and the combination of various design infirmities create poor incentives for performance. Block transfers have formula based allocations and simple guidelines. However, these are offset by the expenditure focus and lack of a sunset clause. There is an overriding sense of the objectives being a central responsibility that prevents securing a state ownership and concern about qualitative achievement. In the case of non-matching schemes, the expenditure focus and failure to secure a credible sunset clause are compounded by problems related to lack of clarity in allocation criteria (in some cases) and the internal monitoring arrangements. Concern with inability to secure performance appears to be driving greater attention to more complex process oriented guidelines. While matching schemes ensure state participation; in view of the design shortcomings, usually the attempt is to convey

[43]eg. Grewal B.S.Centre – State Financial Relations in India, Patiala, Punjabi University,1975, Gurumurthis, Fiscal Federalism in India:Some Issues, New Delhi, Vikas, 1995

[44]Some examples are Sinha R.K., Regional imbalances and fiscal equalization, New Delhi, South Asian Pub. 1984, Rao S.R. Federal Fiscal Transfers in Iindia, N.Delhi, APH Publishing 1996, Vithal BPR and Sastry ML, Fiscal Federalism in India, New Delhi 2001

[45] Grewal (1975), Gulati (1987), Guhan (1993), Gurumurthi (1995),

[46] The issue has been frequently raised in the National Development Council and committees have been periodically set up to review the number of CSSs but with rather indifferent results. Begun in the IVth Plan as an adjunct to the formula based central assistance to state plans, they have been proliferating ever since. The Rao Committee (1987) succeeded in reducing slightly the number of schemes in the VIIIth plan period. But they have maintained a rising graph since then despite some attempt to prune their number in the next two plans also. A new attempt at reducing the number from 147 to 66 has been approved by the Centre in June, 2013.

proforma adherence to secure the central shares. On the whole, the design parameters of all these schemes would appear to generate the kind of perverse incentives that a principal agent relationship is prone to in the absence of an ability to effect a change in agents or deliver a credible message of penalty for poor performance[47]."

Change in the traditional design of CSSs began to be seen after 1999 as mentioned in Section II[48]. Do the new designs improve the incentives to secure sustainable outcomes? Many of the new generation of performance oriented schemes have sought to give a thrust to bridging gaps in infrastructure capacity in various sectors. They have sought to enhance the sustainability of the proposed investments in various ways. Design features of ten such schemes are described in the table below. One of the examples being discussed falls outside the rubric of centrally sponsored schemes. Since the Eleventh Finance Commission, incentives schemes for fiscal reforms have formed part of Finance Commission recommendations. The latest version, adopted on the recommendations of the Thirteenth Finance Commission, has been included in this table.

1. Pradhan Mantri Gram Sadak Yojana (PMGSY)

2. Rajiv Gandhi Grameen Vidyutikaran Yojana (RGGVY)

3. Accelerated Irrigation Benefits Programme (AIBP)

4. Jawaharlal Nehru National Urban Renewal Mission (JNNURM)

5. Restructured Accelerated Power Development and Reform Programme (R-APDRP0

6. National Rural Drinking Water Programme (NRDWP)

[47] 'Flow of Funds and Monitoring Arrangements under selected Centrally Sponsored and Central Schemes' study conducted by the National Institute of Administrative Research (NIAR) for the Planning Commission, 2002-03.
[48] Fresh attempts at design changes have been reported in June, 2013 with the Union Cabinet approving a Planning Commission proposal to both downsize CSSs from 147 to 66 and introduce a flexible fund of up to 10% of scheme outlays, for state governments to develop their own schemes.

7. National Rural Health Mission (NRHM)

8. Rashtriya Krishi Vikas Yojana (RKVY)

9. Nirmal Gram Puruskar (NGP

10. Thirteenth Finance Commission (Th.FC)

Table 6

Design Features of New Generation Central Transfer Schemes

1.	2.	3.	4.	5.	6.
Sr. No.	Scheme	Allocation Criteria	Performance Benchmarks	Monitoring & Evaluation	Penal Provision
1.	PMGSY	Largely formula based with small discretionary element	Expenditure/input level & some measurable output	Internal, systematic with provision for external inspection	Withholding of releases
2.	RGGVY	Mix of formula based rights with discretionary element	Expenditure/input level & some measurable output	Internal systematic	Withholding of releases
3.	AIBP	Mix of formula based rights with discretionary element	Expenditure/Input level & Policy change outputs	Internal without systematic structure	Reduction in future allocation
4.	JNNURM	Largely formula based with small discretionary element	Expenditure/Input level & Policy change outputs	Internal without systematic structure	Withholding of releases
5.	R-APDRP	Mix of formula based rights with discretionary element	Expenditure/input level & some measurable output	Internal systematic	Prospective Penalty
6.	NRDWP	Largely formula based with small discretionary element	Mostly Expenditure /Input levels	Internal without systematic structure	Withholding of releases
7.	NRHM	Largely formula based with small discretionary element	Mostly Expenditure /Input levels	Internal without systematic structure	Withholding of releases
8.	RKVY	Largely performance based with small formula element	Mostly Expenditure/ Input levels	Internal without systematic structure	Reduction in future allocation
9.	NGP	Non discretionary pre-determined amount linked to performance	Clear measurable output	One time external inspection.	Foregoing of incentive/ allocation
10.	Th. FC	Non discretionary pre-determined amount linked to performance	Clear measurable output	Systematic external data generation	Foregoing of incentive/ allocation

Six of the schemes described above have a focus on bridging an infrastructure gap in rural connectivity, power, drinking water, irrigation and urban services. They have sought to address the issue of sustainability of the assets to be created in diverse ways. RGGVY has no explicit provision but PMGSY seeks to include a five year maintenance provision with the construction contract. The NRDWP has the small sustainability component (discussed in the earlier section) where communities must bear all O&M as well as a 15% allocation for maintenance. The AIBP and JNNURM seek policy changes to enhance cost recovery and public participation to bring about financial viability of irrigation schemes and cities. The R-APDRP has a single monitorable loss reduction indicator that by improving the finances of distribution companies, will presumably address asset maintenance. However, none of these schemes have design features which actually delivers a credible message that sustaining the assets and infrastructure created will be a worthwhile endeavour. In fact, the lack of a sunset clause, conveyed by the continuation of these schemes (by the same name or in new incarnations) from one plan to another and the enhanced allocations for even more infrastructure creation, conveys quite the opposite signal. The message is that the greater the level of 'deprivation', the greater the allocation a State is likely to receive, performance will not pay. PMGSY has resulted in a huge increase in rural road connectivity. However, even as use and upkeep of assets created are areas of concern, PMGSY II for other rural roads requiring up-gradation, is on the anvil. Similarly RGGVY has funded carefully monitored infrastructure creation but whether adequate power will actually flow on these new lines is uncertain and sustainability in terms of maintenance is far from guaranteed. Both AIBP and the more glamorous JNNURM sought prior MoUs with States committing to reforms to enable cost recovery and policies to make irrigation schemes and cities financially sustainable and accountable entities. In both cases, MoUs were signed and investment support committed but sustainable schemes or cities delivering accountable services, remain a far cry. The same story plays out for the NRDWP as already discussed. The R-APDRP has future loss reduction by state electricity distribution companies (discoms) as a condition for the investment support to be treated as

a grant. It seems unlikely that many discoms will meet the target and it is an open question whether the threatened penalty will be imposed on defaulters.

Two of the schemes discussed have broader outputs as a goal, the RKVY aims at increase in agricultural growth rate and the NRHM at an improvement in health related indicators. Both schemes offer a relatively flexible menu of options for States to choose from, as areas to spend on. Even so, there is some attempt to nudge States in the direction of preferred inputs and no proper baselines to measure performance have been created (the NRHM has though funded a one time exercise to gather basic data through large surveys for each district in focus States). There is a pressure to show expenditure in both schemes that out-weights any incentive to show results on outcome indicators. Both programmes however report improvements and the level of flexibility afforded to States is certainly in marked contrast to the rigidity of other programmes and earlier incarnations. It can be argued thought that greater freedom to States and incentives more clearly linked to performance indicators could have delivered better and more sustainable results.

The most effective recent example of a conditional transfer scheme in India has clearly been the Thirteenth Finance Commission's linkage of part of the devolution package to meeting targets of fiscal prudence. A clear performance benchmark, monitorable through the figures in the State Finance Accounts maintained by the CAG of India, a penal provision that hurts and a sunset clause that is final have been key features of the design. Success has in the final analysis been ensured by the Finance Ministry's willingness to enforce the scheme but the design has most certainly helped. The simple indicators of the Thirteenth Finance Commission in relation to Fiscal/Revenue deficits have been easy to monitor and the credible incentive/penalty linked to meeting targets has proved effective with most States showing a revenue surplus even as the Centre's fiscal health has been deteriorating.

The NGP despite its positive design features of clear output indicator and penal provision has, on the other hand, failed to actually deliver the desired results. The NGP has been awarded to over 25,000

rural local bodies for achieving a fully sanitized open defecation free environment. However, evaluations show most awardees were one time show cases for the verification process and continue to be part of India's 58% contribution to the world's open defecation load. This brings out the need to not only improve monitoring but more important to stagger the target and incentive / penal provision over a period of time. The Thirteenth Finance Commission set the target for each of five years and linked the incentive/penal provision to each year. Therefore, achievement in one year if not sustained could lead to a loss in the following years. The NGP is an one shot exercise where the reward can be earned without showing sustainability.

It is clear that conditional transfer schemes in India, specially those focused on bridging infrastructure gaps, continue to be mired in chasing retreating goals. Sustainable delivery of services by the assets created is not a priority. However, there are pointers to successful design in the experience of some schemes and these can be built on to redesign central funding in the rural drinking water sector.

Key lessons that emerge from the preceding review are:

i) Financial penalty/incentive linked to clear, monitorable indicators of the desired outcome has the potential to deliver desired results and change the focus from asset creation to delivering services.

ii) Monitoring is most effective when linked to credible generation of data on simple indicators of performance.

iii) An one shot reward linked to a single evaluation, even by an external process, can be deceptive. Multi tranche rewards/penalties linked to monitoring of results on a regular basis is essential for sustainable results.

iv) Flexible funding allowing an interchange between different inputs (akin to block grants) has secured greater ownership by State governments.

These lessons are consistent with the theoretical principles discussed earlier. A radical switch to a competitive performance based transfer scheme may seen to be the logical answer in the drinking water and other sectors. However, the longevity and never ending nature of CSSs in different sectors has meant that a perception of entitlement to these funds, which can be drawn upon as a right, has become entrenched in the States. A shift to a completely competitive system, even in the remote instance of this finding favour with the Centre, is likely to meet with objections from the States.

Based on the design parameters discussed earlier, the experience of the past and the lessons learnt from the performance/reform schemes introduced in recent years, a possible new design for a centrally sponsored rural drinking water supply scheme (whether called NRDWP or by some other name) could have the following features:

1. Central support may be divided into two:
   - i) a normative formula based block grant available to all States to spend on rural drinking water in a flexible mode and
   - ii) a performance based incentive to be secured only by States which do better on pre determined bench marks.

2. (i) The total allocation for the normative block grant may be kept at about the same level as the current normal all States allocation so that there is no drastic revision inviting a backlash from the States. It can remain nominally constant each year, even as the amount allocated for the performance based incentive is enhanced based on a robust monitoring system that begins to yield increasingly more credible information over time.

   ii) The distribution of the normative block grant portion amongst States can be based on a formula that includes rural population, area and proportion of difficult areas (groundwater

stress, chemical contamination, hilly terrain) so that it has a similarity to existing criteria (this may enhance acceptability).

iii) The normative block grant portion will be available to a state to spend on operation and maintenance of existing schemes or creating new schemes in whatever ratio it chooses. There will also be complete flexibility on the nature of new schemes and norms of per capita availability that a state chooses to deliver. The message to the States will be to use this grant as deemed appropriate by them in order to perform better on the indicators for which the performance based incentive will be given.

3.(i) The idea of simple, credible indicators of performance in the drinking water sector seems difficult at first glance. Gauging service standards of adequate, regular, access to safe drinking water to vast numbers in scattered habitations on a continuous basis would appear to present insurmountable difficulty. After all, the Centre's initiative to secure a water quality surveillance system has failed to deliver credible results even after years of efforts. Introducing community based water quality testing has seen little success till now. In fact, there has been no successful example of comprehensive monitoring in this sector till now. It would be seen that mounting a credible continuous external monitoring process would be akin to setting up a parallel implementation machinery with no guarantee of success. However, there are two examples, one in education and the other in health that can be of help in devising both indicators and a comparative State-wise picture every year. In education, Prathams' annual status of education reports (ASER) are based on simple sample surveys to assess learning standards amongst children across States. They have yielded credible comparative data. In health, the NRHM has funded the NSSO to conduct district wise sample surveys in focus states to secure annual data on key health indicators. These examples show that simple evaluation techniques can be deployed on a

fairly large scale across States at least once a year and result in credible, comparative data without incurring phenomenal costs.

ii) Performance rewards in the drinking water sector can be divided into two components. One component to gauge the extent to which delivery is making a different to people's quality of life. This can be assessed by securing information on rural consumer satisfaction levels gauged through annual surveys by the NSSO[49]. Information on various parameters can be weighted to compile an index score for each State. An all State average satisfaction level can be computed each year and States achieving above average scores can secure a reward based on the extent of above average score and the total rural population in the State. The per unit incentive amount can be increased as the improvement above the average increases so as to make performance even more worthwhile. Such a benchmark has the added advantage of an 'average' bar that possibly rises every year as each State is motivated to perform better to get a greater amount of incentive.

ii) The second component can relate to the core logic of state intervention in drinking water – its link to health. Provision of safe drinking water should result in reduction in the incidence of water borne diseases. However, securing credible data on morbidity related to water borne diseases is still a tall order in India. The closest proxy data is country-wide extension of the data that NSSO is producing on health indicators in the focus States under the NRHM. This can form the basis for constructing a comparative index for all States and structuring an incentive on the same basis as the consumer satisfaction based incentive. A criticism against use of this proxy data can be that attributing changes in these indicators to drinking water alone will be erroneous. The best answer to this would

[49] Himachal Pradesh conducted a survey to yield comparative district wise data on consumer satisfaction at a very reasonable cost in 2008. Such experiments can easily be improved upon and conducted on an annual basis.

be to create an incentive fund that puts together contributions from the central schemes in the drinking water, sanitation and health sectors to reward improved performance on core health indicators.

V

Prospects

This section examines briefly the following questions: Is there a constituency that will support the advocated change in the design of the NRDWP in particular and specific purpose transfers in general? What is the nature of the opposition to such a change? What are the prospects for securing a change in the face of the likely challenges?

It is generally understood that securing a constituency for reform is difficult while marshalling opposition is a much easier task. Reform usually offers gains in a diffused, uncertain manner to unorganized, divergent sets of beneficiaries. Thus, a performance oriented NRDWP design is expected to generate a new set of incentives that may deliver better services to the ultimate consumer, over a period of time. The loss from the new way of doing things is, however, immediate and obvious to all those involved in the process. Broadly, three inter related sets of challenges can be identified to bringing in a new order.

At one level is the perceptions and mindsets of the various players who are used to the prevailing centrally dictated system of setting priorities and processes. At the beginning of the planning process, the immense gap in the availability of infrastructure for services in sectors like power, water, transport and indeed education and health meant an overwhelming emphasis on creating assets like irrigation or drinking water projects, power plants, roads, schools and hospital buildings and on securing personnel to staff these projects and institutions. This understandable priority became the sine qua non of all schemes and plan expenditure over the years. Funds were allocated to create new assets and institutions to fit in with a central design of how services would be delivered. The creation of these assets, of inputs like buildings and the hiring of personnel to staff institutions were the achievements, the system was geared to monitor. Maintenance of existing assets and the quality and adequacy of services to be delivered, were seldom monitorable targets. The central bureaucracies are now entrenched in a tradition where they

design the contours of what is appropriate, sanction projects and release funds (and dispense some patronage along the way). The underlying assumption is that the States need to be told what they should do, they are likely to be profligate and they will fritter central funds in the pursuit of their wasteful, unproductive objectives. (The fact that important functionaries at the central level are usually persons who have indulged in such behaviour when in the States, possibly strengthens this perception!). An approach that seeks hands off behaviour, leaving States in command of funds once devolved, would be completely alien to this legacy. Equally disturbing is the notion that the devolution would be based on transparent norms and externally derived performance data, leaving little scope for discretion and patronage.

At the State level, departmental bureaucracies would suddenly need to think and act to meet an entirely different set of objectives. From being agents, they would have to become responsible principals and find new ways to secure funding from miserly State finance departments. Even in State finance departments, which might be expected to appreciate flexible funding, often the perception of wasteful ways of departments is so strong that external control over project sanction and disbursement is considered more effective than systems within the state government.

At another level, the limitation that will result on the ability to play patron by the party in power at the Centre seeking to secure influence in specific States, is a major stumbling block in a shift to a transparent, performance based, conditional transfer scheme. Overall, the Centre has always attempted to direct flows to States to achieve political objectives. Finance Commission related transfers obviously played little role in this except to the extent that a Finance Commission could be influenced in making its recommendations once in five years. The formula driven portion of block grants for State plans, similarly offered less cope for discretionary allocations. The relative flexibility under centrally sponsored schemes has always made these the most favoured route to structuring State specific packages of assistance (apart from directing debt flows and externally aided projects in the desired direction). Over time, the propensity to bail out States ruled by the same party as the dominant (majority) party at the Centre has given way to

placating States ruled by parties offering support to the dominant (but in minority) single party at the Centre. Now that the Thirteenth Finance Commission has fixed debt ceilings for each State, thus plugging one channel of discretionary flows, the importance of traditional CSSs as a weapon in the centre's discretionary arsenal, has correspondingly increased.

Another challenge in shifting to a new form of performance oriented conditional transfers is presented by the growing strength of the 'entitlement' perspective in the last decade. The recent debate over entitlements has largely been presented as a redistribution versus growth issue. It has become couched in Sen (and Dreze) versus Bhagwati (and Panagariya) terms with Sen according primacy to redistribution (through legally enforceable rights) and the Bhagwati camp arguing that the cake must grow first, for redistribution to be meaningful or even possible. Starting with the employment guarantee act and moving on to the right to education and now food security, the entitlement viewpoint has already secured significant victories over the last few years. Another proposed legislation pertains to the right to a homestead. Logical future extensions can include rights to specified quantities of safe drinking water, preventive and curative health care benefits, access to a toilet, etc. In this perspective, the state must be legally held accountable for the provision of these rights. For this ensuring availability of infrastructure facilities and other inputs becomes a measure of the state undertaking its responsibility. Centrally sponsored schemes must, therefore, become vehicles for ensuring that States supply the centrally designed inputs. The entitlement viewpoint, in effect, runs counter to autonomy for States to deliver performance on outcome indicators in ways they deem appropriate and instead strengthens the 'agency' relationship of traditional CSSs. Proponents of the proposed change in the design of CSSs will willy nilly be cast in the anti-redistribution camp and the new transfer schemes could end up being labeled as a market oriented, neo liberal sell out that seeks to reduce the role the state must play in providing for the weaker sections of society.

Given these challenges, the prospects of securing a dramatically changed design of CSSs in general and the NRDWP in particular, do not appear bright. Even in the face of overwhelming evidence of the misplaced logic of current design, past experience highlights the resilience of traditional CSSs. Poor outcomes can sometimes fuel bold reformist statements which are subsequently discussed and diluted by removing all difficult elements, leaving paper reform in its wake[50]. More likely are compromises than can end up being even more disastrous. Seemingly radical elements in the design can give the impression of progress, reduce the clamour for change and actually leave matters unchanged. The attempt at introducing comprehensive reforms in rural drinking water is a classic example of this kind. Recognition of the ills that plague the sector and vitiate accountability for sustainable outcomes resulted in a proposal for a comprehensive overhaul of the sector in 2003. The proposal sought to make central financing in the sector conditional on an MoU that would result in an appropriate allocation of roles relating to policy making, financing, regulation, design, construction and O&M to different tiers of government consistent with the subsidiarity principle and would at the same time ensure restructuring of State engineering departments or Boards to remove the most important obstacle to reform. But as finally implemented, all contentious, difficult areas became part and parcel of a reform idea that refuses to die despite recurring evidence of its failure to deliver[51]. This is the compromise application of subsidiarity to include single village simple technology water supply schemes or retail water supply even as 'big brother' PHED continues to not only exist in its traditional form but to be sustained by being funded for providing access in the case of multi village, water quality problem or difficult technology areas. This corruption of devolution from vesting of the function of providing safe water with local bodies to only handing over responsibility for certain schemes to some communities negates the whole essence of subsidiarity and

[50] Briscoe and Malik, pp 62 describe this as one among various ineffective types of reform initiatives categorized by Tushaar Shah in a Background Paper for their report
[51] Ibid pp 62

dooms the whole scheme to failure as experience has shown. But most reform adherents regard this as a significant victory and have been busy extolling this as the route to sector wide change[52].

In fact, reform advocacy for change in the system of delivering basic services often tend to focus on seeking devolution to local bodies or communities as the key change required to enhance accountability. The attempt then becomes one of inserting devolution or decentralization related elements into the design of a CSS. The thrust is on providing a role for Panchayati Raj institutions in rural development or wage related programmes, management committees with community and parent representation in schools and Roghi Kalayan Samitis in health institutions. For many decentralization proponents, States are the villains to be circumvented or goaded into action with the help of the Centre[53]. These efforts only mean a change in the nature of inputs sought by the Centre and do not alter the essentials of a principal agent relationship which characterize traditional CSSs.

Is there then no way to break this logjam? A genuine performance orientation needs to recognize the autonomous sphere of the States in decisions on the modes of implementation. Bringing this about is indeed a tall order. Possibly a more state dominated political combination at the centre could offer an opportunity. After all, the least discretionary flows from the Centre to the States are reported to have occurred during the United Front Government in the period 1996 to 1998[54].

Meanwhile, there is need for more work to demonstrate that current solutions are feeding back into the loop and do not represent a break from the expensive cycle of infrastructure creation, to

[52] Bringing genuine reform to any sector, when the political economy is unwilling to accept the change is impractical. Tinkering at the margins will at best create some great examples which adherents will point to as the achievable goal if everyone works with sincerity. In the absence of fundamental alteration in the incentives at work in the system as a whole, such examples will remain isolated instances, if they do not die out eventually. But those plugging this route will inevitably create the false grail which further delays genuine reform.

[53] Even if the States are not directly cast as villains, ardent decentralization supporters still wish to influence CSS design to favour their objective. Raghunandan T. and Aiya, Y.,in Indian Express, June 26, 2013

[54] Khemani, Stuti 'Partisan Politics and Intergovernmental Transfers in India, "Working Papers, World Bank, 2003.

accountable service delivery. The basic incentive structure of the stakeholders in the system has to be altered for sustainable change to have a chance.