WATER SUPPLY AND SANITATION IN SMALL TOWNS OF MADHYA PRADESH

A CITIZENS' REPORT CARD

Purpose

The study seeks to assess the status of sanitation and water supply in smaller towns of Madhya Pradesh from citizen's' perspective. Undertaken in five Nagarpalika/Nagar panchayat towns of the state, it identifies the causes and factors responsible for people's dissatisfaction with the current situation.

Methodology

The five towns selected for data collection are Sehore, Seoni, Tikamgarh, Sidhi and Ajaygarh. Four are Nagarpalikas, the exception being the much smaller Ajaygarh, which is a Nagar panchayat with a population of 13,979. However, the Nagarpalika towns also differ in size and profile, their population/ward details being Sehore: 90,930, Seoni: 89,799, Tikamgarh: 68,572, and Sidhi: 45,664.

The study sample included 300 respondents from 10 wards in each town. The number of wards was kept high to capture the diversity across the substantial geographical area of these towns.

The topics covered under sanitation included environmental issues like garbage collection, drainage etc and household issues like coverage of household toilets. Water supply covered issues like constraints in access to safe drinking water and status of water availability.

Trends and Findings

- The feedback of respondents reveals very high variations from one town to another. For example garbage collection in Ajaygarh is 60% and in Sehore it is 30%. Similarly sweeping undertaken by sanitary workers is 5% in Sehore and 45% in Tikamgarh. Similarly only 15% of the Ajaygarh respondents have piped water supply, 60% of the Seoni respondents hav the same. In such a situation, it may not be appropriate to use the averages calculated from the overall data to arrive at a generalized macro picture of the current status of sanitation and water supply in small towns of Madhya Pradesh.

- There appears to be an inverse relationship between the size of the town and its environmental sanitation status, with the differences between better performing small towns and poor performing bigger-sized towns being fairly substantial. However, it would not be appropriate to make any generalizations because there are significant town-wise variations in municipal efficiency in maintaining sanitary conditions. Thus, towns that appear to be performing better may be the exception rather than representing a trend.

- Availability of municipal water connections increases with size of the town, although this does not reflect the effectiveness of municipal supply. Taps run dry and quality of water is below acceptable limits even where coverage is good.

- Coverage of household toilets is also related to town size. But, here again, coverage falls to as low as 50% for a small town like Ajaygarh and high as 80% in Sehore.

- Water-logging is an important element contributing to poor environmental sanitation, with the poor condition of drainage across all towns exacerbating the situation. However, while inadequate drainage infrastructure appears to be the root cause for poor drainage in the smaller Nagar Panchayat of Ajaygarh, it is inefficient municipal services in the case of the bigger Nagarpalikas.

- Satisfaction with solid waste disposal is low, with nearly 80% of respondents stating the condition is bad or very bad. The rest say the status is just average, with very few being happy about the current situation.

Recommendations

The study clearly builds up a case for developing a regular feed back mechanism from the citizens' primarily to understand various issues involved in any sector. Regular feedback provided by the citizens is a helpful tool/mechanism for the supply side agencies/management to improve their service delivery system. Annual exercise to bring out a report card before the annual planning of the municipality/towns will provide strong citizen's inputs as well as create space for sharing responsibility with them.

Small towns are particularly deprived of effective management skills and exposure to plan on technical aspects like solid waste management or funeral ground etc. It is visible that wherever the top executive or political leadership is dynamic and management/result oriented water and sanitation management is effective. The technical staff needs to be exposed to visit effectively managed towns in water and sanitation. It will motivate the team as well as provide them learnings for improvements.

Social exclusion is evident in small towns also. The communities of scheduled caste and scheduled tribe are still deprived of better access to water and sanitation facilities. There is a need to review municipal budgets from gender lenses as well as from the poor and disadvantaged persons perceptive.

Sanitation Issues

For the purposes of data collection, sanitation was divided into two components - environmental and household sanitation. Environmental sanitation included garbage collection, solid waste disposal, water logging, drainage and general sanitation, while household sanitation included provision of household and public latrines, access to toilets and defecation in open spaces.

Environmental Sanitation

Solid waste disposal

The study shows that priority given to sanitation varies significantly from town to town. Those towns that push their environmental sanitation agenda perform well on all fronts, while others lag behind. Significant differences can also be seen in the discipline of people engaged in environmental sanitation.

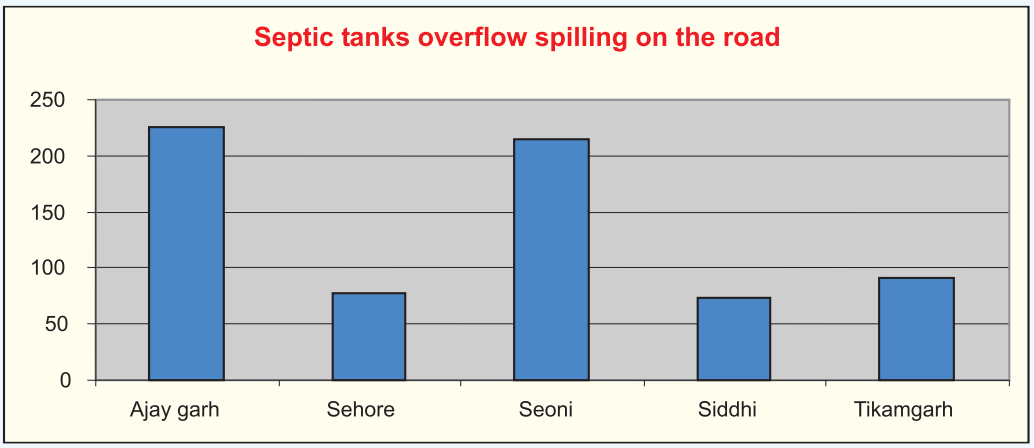
In most small towns, the quantum of garbage generated is fairly low, most of it being biodegradable. Since the towns are largely non-industrial in character, the volume of industrial, chemical, metal and other similar kinds of waste is relatively low. Domestic household waste mostly consists of vegetable peels, animal wastes like faecal matter, left-over food and other similar wastes.

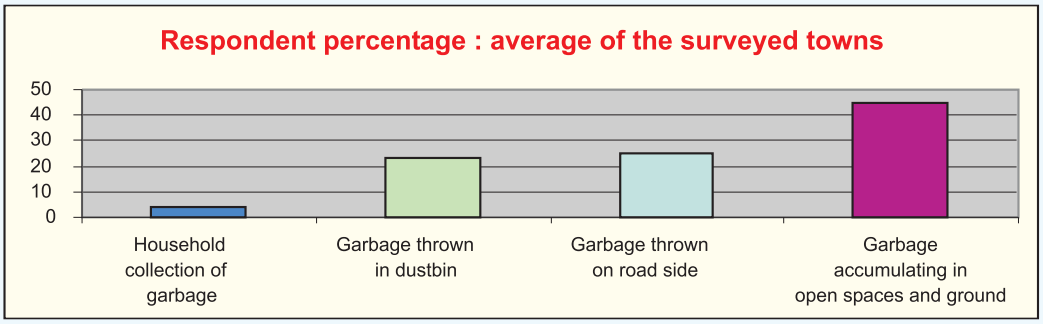
Disposal of garbage depends on factors like attitudes and habits of the community, availability of sanitation infrastructure like dustbins, distance from dustbins, availability and discipline of sanitary workers, regularity of garbage collection by the municipality, etc.

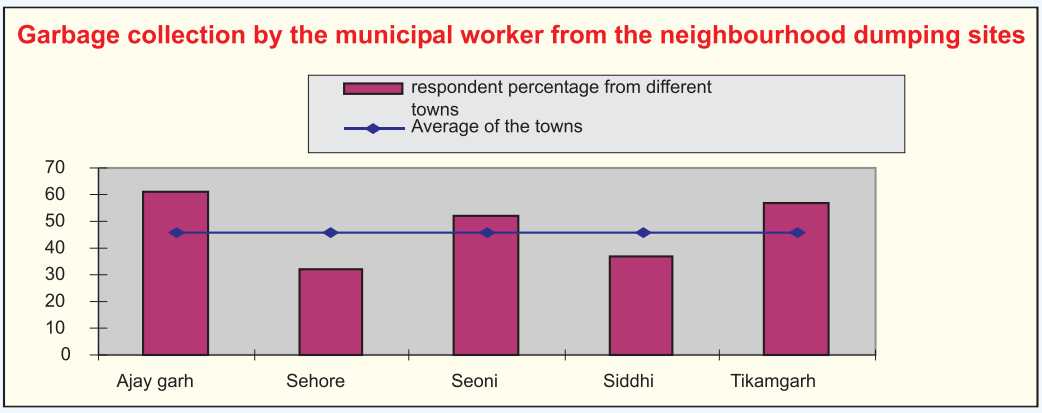
Nearly half the respondents in Ajaygarh and Tikamgarh throw the garbage in dustbins, while the number dips to one-tenth in Sehore or Sidhi, the average for all towns being 25%.This reflects that disposal of garbage in dustbins is relatively higher in smaller towns like Ajaygarh and Tikamgarh, compared to larger towns like Sehore and Sidhi. This may be because dustbins are available within walkable distance.

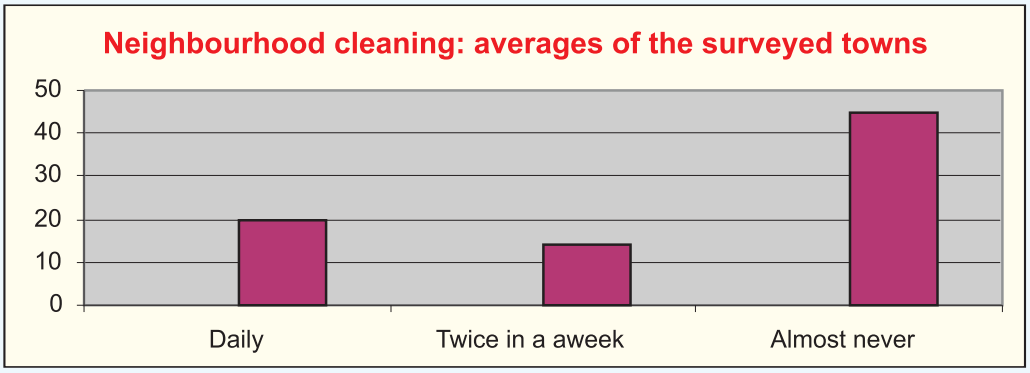
In the absence of an adequate number of dustbins and given the poor sanitary habits of the residents, 40 to 50% of respondents say they discard their garbage in open spaces in the neighbourhood. However, here again, there does not appear to be any correlation between town size and garbage disposal practices, with only 30% of respondents in Tikamgarh which is a medium size town saying they dispose of their garbage in open spaces.

Given the widespread practice of disposing of garbage in open dumping sites it is essential that municipal workers collect garbage not only from


Septic tanks overflow spilling on the road
250
200
150
100
50
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


Respondent percentage : average of the surveyed towns
50
40
30
20
10
0
Household collection of garbage
Garbage thrown in dustbin
Garbage thrown on road side
Garbage accumulating in open spaces and ground


Garbage collection by the municipal worker from the neighbourhood dumping sites
respondent percentage from different towns
Average of the towns
70
60
50
40
30
20
10
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


Neighbourhood cleaning: averages of the surveyed towns
50
40
30
20
10
0
Daily
Twice in a aweek
Almost never

dustbins but from these sites as well. However, only 45% of respondents of all the sample town confirm that garbage is collected from all sites at regular or irregular intervals, with 30% claiming the garbage is never collected.

Once again, there are town-wise variations, with smaller towns performing better. 60% of respondents from smaller towns like Tikamgarh and Ajaygarh confirm that garbage is collected, against only 30% of respondents from Sehore and Sidhi.

Regarding sweeping of town streets, nearly 20% of respondents overall say the streets are swept daily, while 45% say they are swept extremely irregularly. But inter-town differences are evident, the figure being 50% for Ajaygarh, against 12% for Seoni, 5% for Sehore and an insignificant number for Sidhi. Nearly 60% of respondents from Seoni and Sidhi claim the streets are 'never swept, confirming the trend that towns performing poorly in other areas of environmental sanitation also fare poorly in sweeping of town streets.

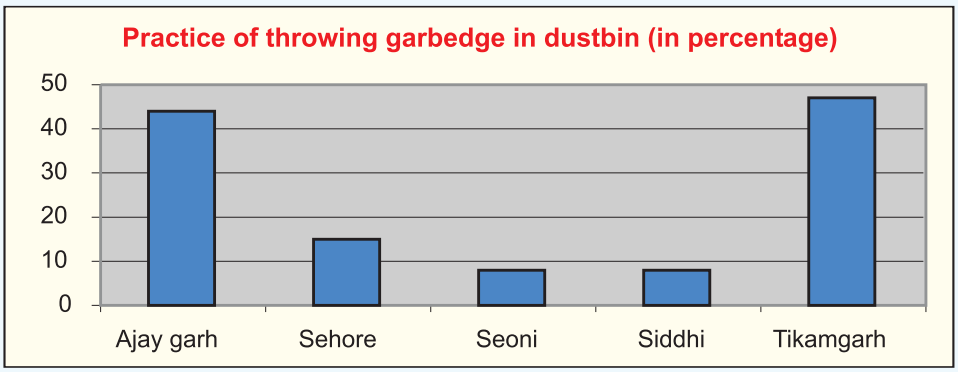
None of the towns has a mechanism for safe disposal of solid waste, not even a proper dumping ground. Hence, satisfaction levels of respondents to solid waste disposal are low. Nearly 80% of respondents say the condition is bad or very bad against just 22% who find the status to be average. Those happy with the current status of environmental sanitation represent an insignificant percentage of the total respondents.

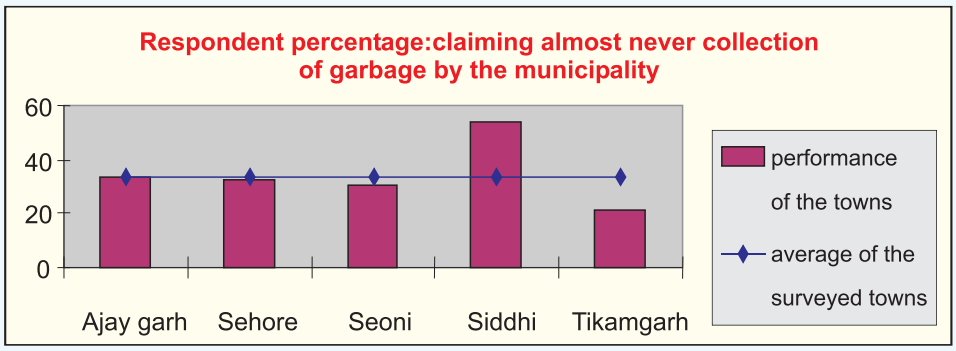
Drainage

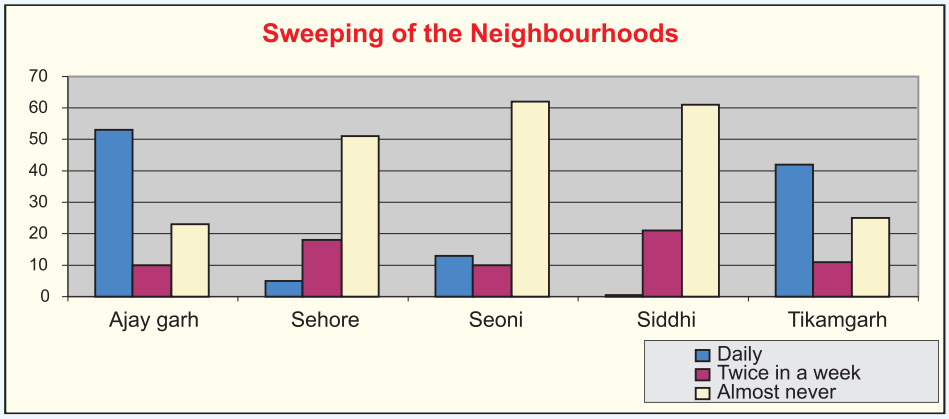
Many of the surveyed towns have a fairly long history of infrastructure development by their erstwhile rulers, trusts or municipal bodies. For instance, Sehore developed as a cantonment of the British Army, while Ajaygarh was developed by the local kings or rulers.

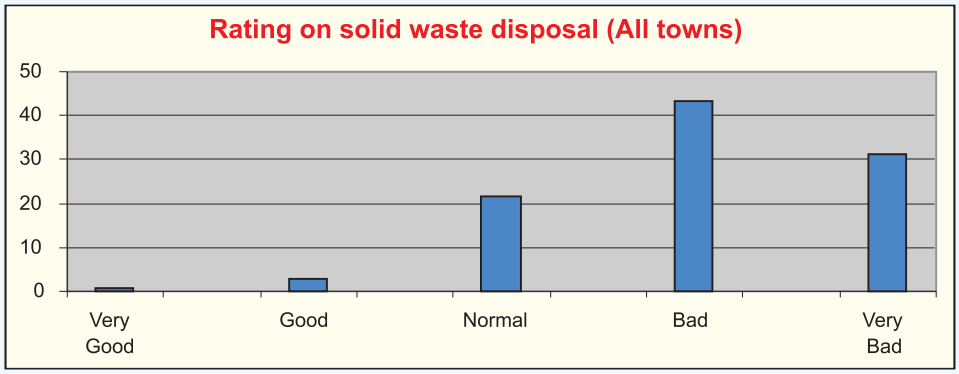
In recent times, these towns have witnessed a rapid growth in their population and a substantial increase in their geographic spread. However, there has been no corresponding growth or improvement in their basic infrastructure of drains, roads, etc most of which were constructed several decades back. Wherever new drains have been constructed, it has been more in response to the strong demands of powerful and influential residents of these towns. As a consequence of this knee-jerk approach, the drainage infrastructure has developed haphazardly, with some localities having drains and very few connecting drains existing between localities.

Most towns depend on open kutcha drains, if at all they have drains. Generally 30 to 40% of medium sized towns are without drains, 20 to 30% are served by kucha drains and a similar percentage has concrete drains.


Practice of throwing garbedge in dustbin (in percentage)
50
40
30
20
10
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


Respondent percentage:claiming almost never collection of garbage by the municipality
60
40
20
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh
performance of the towns
average of the surveyed towns


Sweeping of the Neighbourhoods
70
60
50
40
30
20
10
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh
Daily
Twice in a week
Almost never


Rating on solid waste disposal (All towns)
50
40
30
20
10
0
Very Good
Good
Normal
Bad
Very Bad

For example, in Tikamgarh, which has a comparatively better developed drainage system, 36% of respondent say they are served by open concrete drains, 30% by kuchha drains, and only 30% say they have no drains at all.

Generally, the bigger the town the more widespread is the drainage coverage, with smaller Nagar panchayats appearing to have the poorest infrastructure and drainage coverage, compared to Nagarpalika towns.

Water logging/overflow

Water logging is a direct result of poor drainage - insufficient storm drains, poor construction of drains, lack of connecting drains, inadequate cleaning and upkeep of drains, badly constructed roads with faulty slopes, etc. It can, thus, be looked at as a symptom of the general sanitation status.

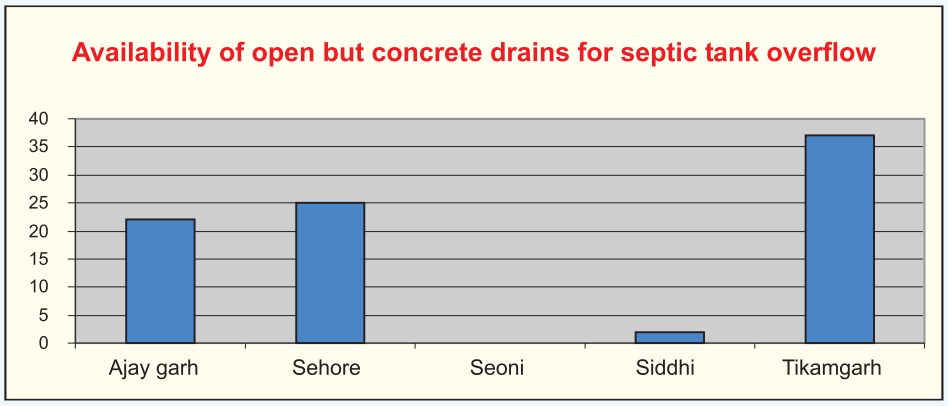
Water logging is a common occurrence during the rainy season because of badly constructed storm drains, the problem being aggravated by poor topography and lack of slopes for natural flow of water. Although 50% of respondents overall say their towns have systems for carrying rainwater, town-to-town variations are high, ranging from 10% in Ajaygarh to 60% in Sehore and Sidhi. As a result, complaints of water-logging also vary and show no correlation to town size, ranging from 85% of respondents in Sidhi, to 65% in Sehore, 37% in Tikamgarh, 24% in Ajaygarh and 20% for Seoni. Low complaints of water logging in Tikamgarsh and Ajaygarh is also due to repeated drought in Bundelkhand region.

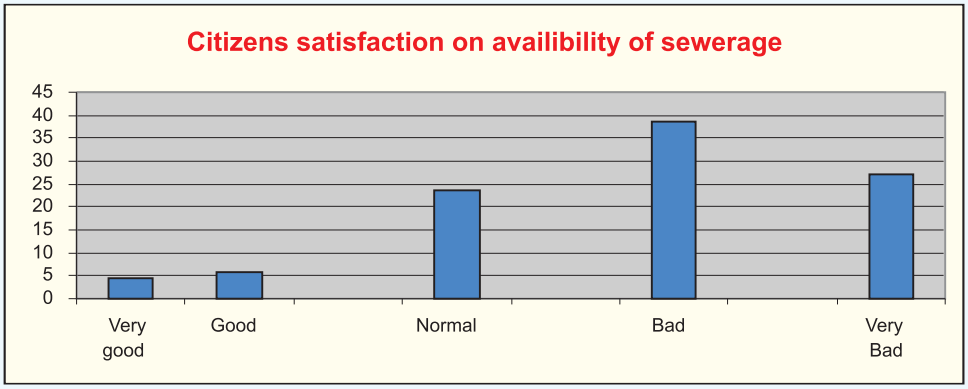
Poor maintenance/cleaning of drains by the municipality are also correlated to water logging. Thus, towns like Sehore and Sidhi, where respondents report frequency of cleaning drains is low, report the highest periods of water logging, with 60% of respondents in Sehore saying water-logging persists for 1 to 3 months.

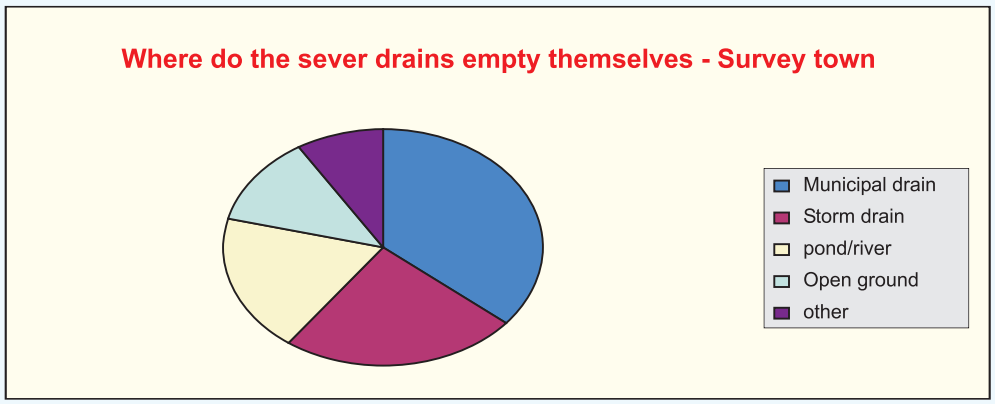
Another problem arising from the poor state of drainage is discharge of used water from domestic consumption or septic tank overflow into open spaces Availability of drains for septic tank overflow is poorest and spillage highest in the smaller towns, with 74% of Ajaygarh respondents saying the overflow spills on the road, the situation being only slightly better in Seoni at 70%. The larger towns fare better in this respect, with only 20% of respondents in Sehore reporting spillage of septic tank discharge.

Drain cleaning/maintenance

Drain cleaning services are poor in both the Nagar panchayats and Nagarpalikas, although responses to the question of maintenance of drains are relatively more positive than responses to availability of


Availability of open but concrete drains for septic tank overflow
40
35
30
25
20
15
10
5
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


Citizens satisfaction on availibility of sewerage
45
40
35
30
25
20
15
10
5
0
Very good
Good
Normal
Bad
Very Bad


Where do the sever drains empty themselves - Survey town
Municipal drain
Storm drain
pond/river
Open ground
other

drains. Approximately 35% of respondents say cleaning and maintenance services of drains are average or better, although 75% find the services to be bad or very bad.

Nearly 50% respondents say cleaning is so irregular it is almost as if it is never done, although around 15 to 25% did say that drains are cleaned once a week on average. For example, while approximately 67% respondents in Sehore are dissatisfied with drain cleaning services, smaller towns like Ajaygarh are better off in this regard, with around 45% respondents saying the drains are cleaned at fairly reasonable intervals. The corresponding figure for Tikmagarh is 47%, with around 40% claiming the frequency is at least once every week. Can we relate it to better municipal administration? Leadership governance?

Ironically, those towns that perform well in solid waste disposal perform badly in sewerage and drainage. It reflects that environmental sanitation is not visualize and planned comprehensively building linkages to solid waste, drainage, household sanitation for improving quality of health or quality of life of the citizens. However, irrespective of the coverage, the effectiveness of the drainage system in all the towns is more or less the same.

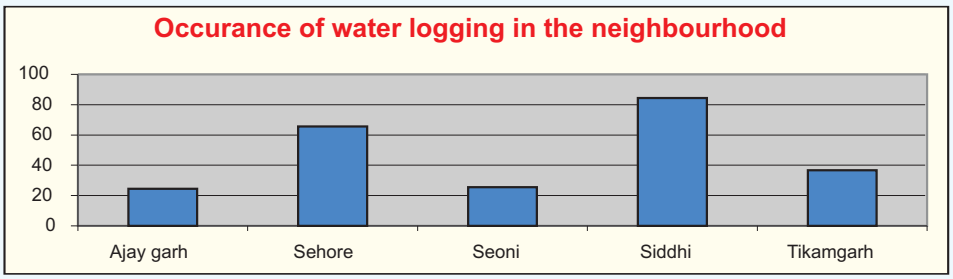
User fees

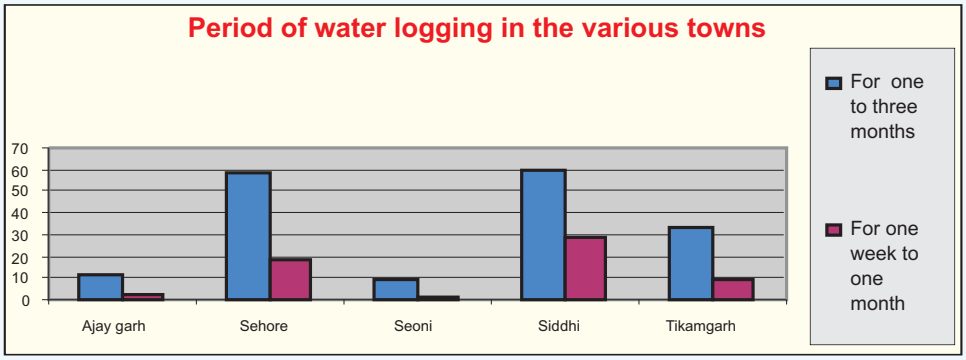
Better maintained drains seem to motivate people to pay user fees, although the overall response to paying fees for cleaning sewer drains is not very encouraging, with only 18% of respondents prepared to pay such fees. The response also varies from town to town, with small towns like Ajaygarh being less willing to pay than towns like Tikamgarh where coverage of drains and maintenance and cleaning performance is better. Willingness to pay is also related with the economics issue of the town. Ajaygarh is primarily a small agriculture service centre with a large population is relatively poor and wage labourers. Thus, only a little over 5% of respondents in Ajaygarh are willing to pay, against 30% in Tikamgarh, the overall average for all towns being 20%.

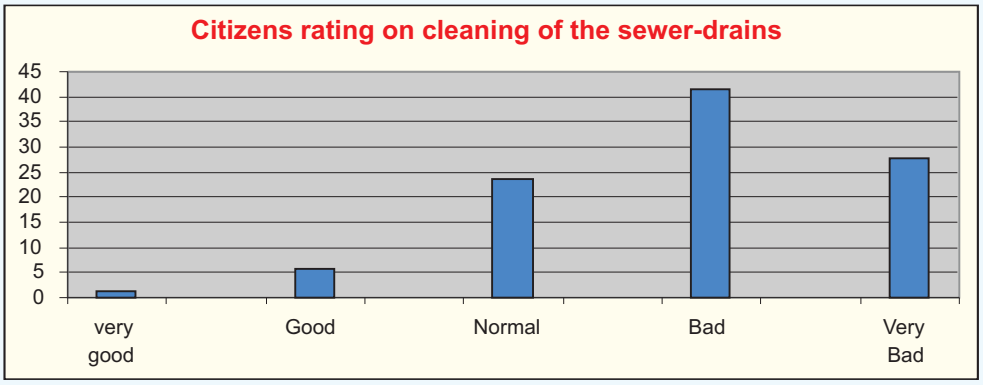
Household sanitation

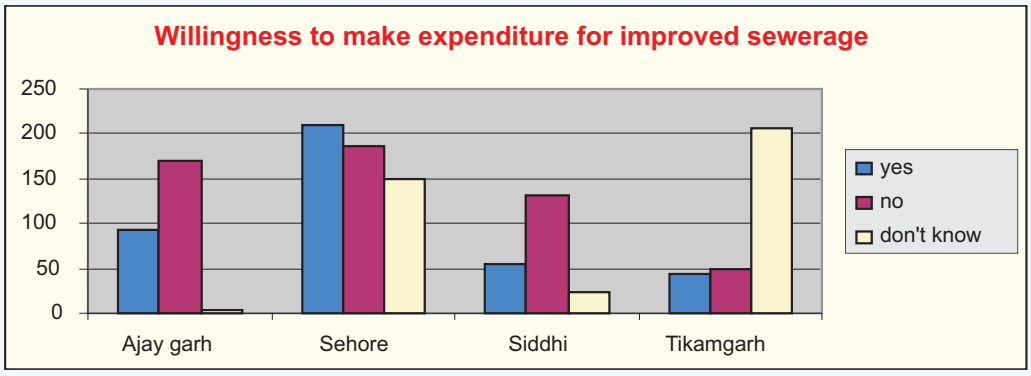
Availability of individual toilets

In general, the status of household sanitation/availability of individual toilets is not very optimistic, varying from 40% for smaller Nagar panchayats like Ajaygarh to 57% for bigger towns like Tikamgarh, 67% for Seoni and 78% for Sehore. Caste factors play a significant role in toilet coverage. While 85% of respondents belonging to the general castes have toilets in their homes, the figure for scheduled castes is only 40%.


Occurance of water logging in the neighbourhood
100
80
60
40
20
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


Period of water logging in the various towns
70
60
50
40
30
20
10
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh
For one to three months
For one week to one month


Citizens rating on cleaning of the sewer-drains
45
40
35
30
25
20
15
10
5
0
very good
Good
Normal
Bad
Very Bad


Willingness to make expenditure for improved sewerage
250
200
150
100
50
0
Ajay garh
Sehore
Siddhi
Tikamgarh
yes
no
don't know

Defecation in open spaces shows a similar correlation to town size, with the figures being 56% for Ajaygarh, 42% for Tikamgarh, 31% for Sidhi, 32% for Seoni, and 20% for Sehore respectively.

It is difficult to say whether the municipalities are directly responsible for high or low coverage of individual household toilets. The coverage is more a response to individual and community needs for secured defecating spaces. As towns grow in size and spread geographically, constraints on open spaces contribute to increased demands for toilets. Structurally, smaller Nagar panchayats like Ajaygarh are more or less overgrown villages, with poor infrastructure and poor toilet use habits. It is the larger towns like Sehore that have witnessed changing community attitudes and have adapted to changing lifestyles over the years.

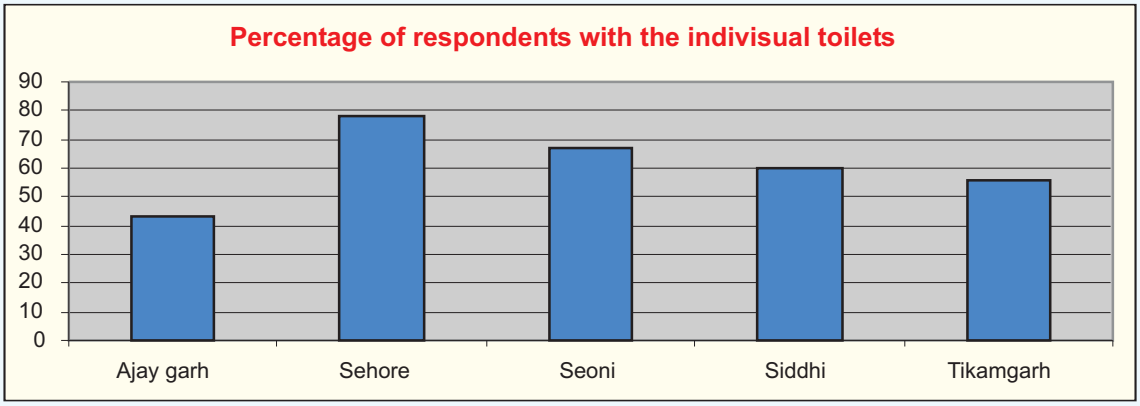
It is difficult to judge the status of toilet coverage from the overall averages, given the inter-twon variations, although there does appear to be a positive correlation between size of the town, population and coverage of household toilets, with some municipalities performing exceptionally well in this respect.

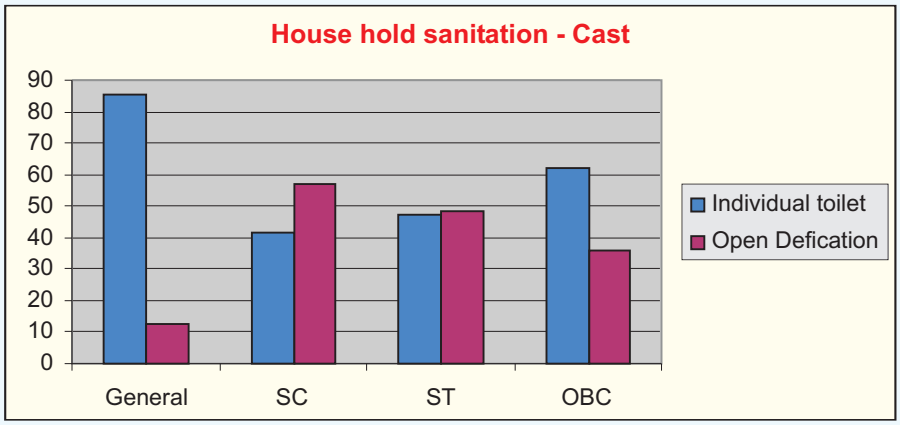
Easy accessibility to water also has a bearing on toilet use habits, although this does not appear to be a sufficient condition. In Ajaygarh., 20% of households with municipal tap connections defecate in open spaces, the figure being even higher for households with dug wells and rising to 77% for those that collect water from hand pumps and community dug wells. In Sehore, 95% of households with municipal tap connections have individual toilets, so defecation in open spaces is less widespread.

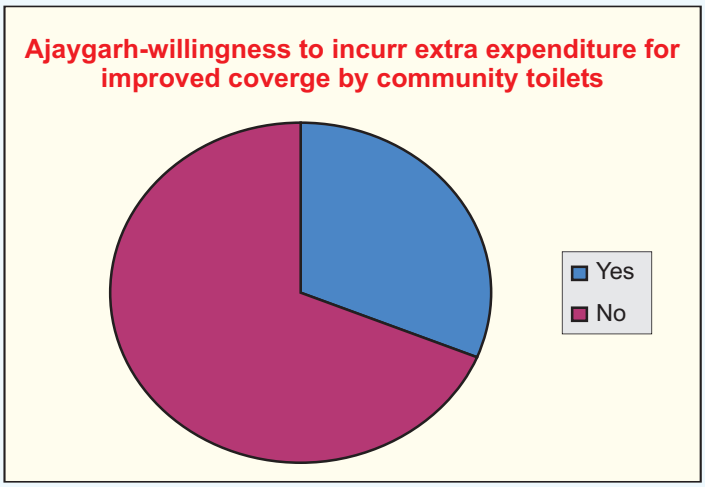
None of the towns taken up for study have explored the potential of community toilets/sanitary complexes or pay-and-use toilets. There has also been limited promotion/use of twin pit toilets, with only 7-10% having such toilets and 30-60% having toilets with septic tanks.

The widespread occurrence of septic tank overflow in all the towns suggests that toilets with septic tanks may not be a very appropriate technology for many small towns, especially the Nagar panchayats. The problem is not space availability in the home; rather it is the management of septic tank overflow that is the constraining factor. The twin-pit appropriate rural sanitation technoloy has not been promoted in small towns by providing adequate knowledge on its design and benefits.

Lack of toilets coupled with lack of sanitary complexes/community toilets has led to dissatisfaction among residents of smaller towns like Ajaygarh. That may be the reason why a sizeable percentage of its respondents (nearly 35%) are willing to pay for improving coverage of community toilets, although 25% are not willing while the rest being non-committal.


Percentage of respondents with the indivisual toilets
90
80
70
60
50
40
30
20
10
0
Ajay garh
Sehore
Seoni
Siddhi
Tikamgarh


House hold sanitation - Cast
90
80
70
60
50
40
30
20
10
0
General
SC
ST
OBC
Individual toilet
Open Defication


Ajaygarh-willingness to incurr extra expenditure for improved coverge by community toilets
Yes
No

Water supply

Water supply sources

There are large town-wise variations in availability of water, depending on local conditions as well as differences in management of water in each Nagarpalika/Nagar panchayat. Hence, town size and type of governing local body are only indicative of the status of water infrastructure development and not a comprehensive determinant.

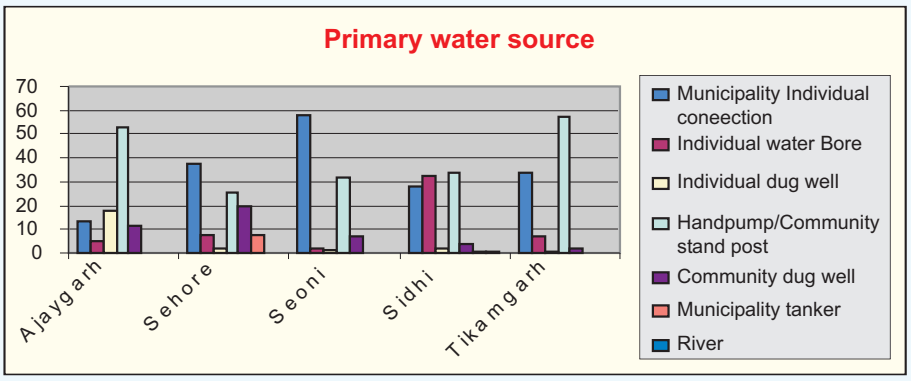
Historically, individual and community wells have been the primary sources of water in most places, although development undertaken by the earlier rulers of towns has had considerable impact on water infrastructure, especially with respect to ponds, wells, *bawris* etc.

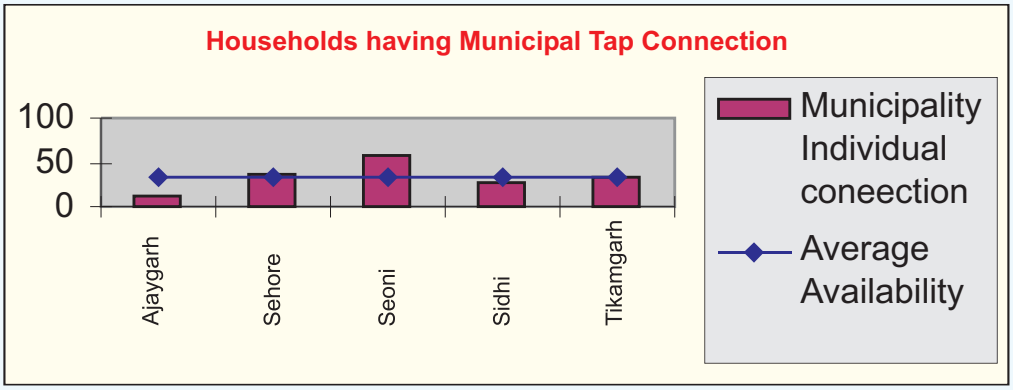
Hence, although individual wells, individual bores, and community wells may contribute to just 5%, 10%, and 10% respectively of water supply overall, they remain a major source even today in Nagar panchayats, which are basically overgrown villages with poor municipal provided water infrastructure. For example, Ajaygarh has 77 dug-wells under the Nagar panchayat and 117 individual dug wells, and only 13% coverage by municipal water connections. Hand pumps remain the most popular town managed option, with nearly half the respondents (43%) saying they get water from this source.

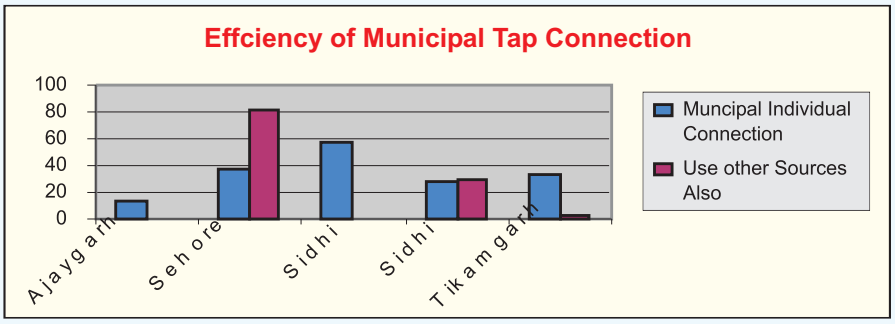
The situation is better in the Nagarpalikas because many municipal bodies/PHED/other departments have made efforts to improve the water situation in the towns over the last few decades, with installation of hand pumps or piped water supply being the most popular choices. The extent to which these local bodies have been able to develop the water infrastructure has depended on how aggressively they have pursued such efforts. As a result, coverage by individual municipal taps ranges from 30% to 40%, rising to 58% for some better performing towns like Seoni.

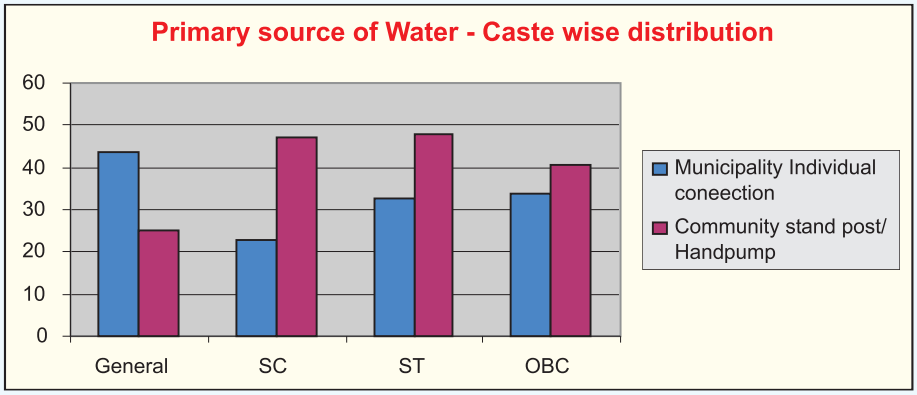
Social factors

In general, water is available within 50 metres of the household in most towns, although 10-20% of respondents report having to travel nearly 100 metres to get water. But although a social good like water is available in towns at virtually no extra cost, it is more easily accessed by the upper castes and classes, with the socially marginalized classes tending to be left out. Only 22% of the scheduled caste and scheduled tribe population have access, against 45% for the general castes. Around 60% of these marginalized castes depend on shared water resources, although this generally does not include either piped water or individual wells/bores.


Primary water source
70
60
50
40
30
20
10
0
Ajaygarh
Sehore
Seoni
Sidhi
Tikamgarh
Municipality Individual coneection
Individual water Bore
Individual dug well
Handpump/Community stand post
Community dug well
Municipality tanker
River


Households having Municipal Tap Connection
100
50
0
Ajaygarh
Sehore
Seoni
Sidhi
Tikamgarh
Municipality Individual coneection
Average Availability


Effciency of Municipal Tap Connection
100
80
60
40
20
0
Ajaygarh
Sehore
Sidhi
Sidhi
Tikamgarh
Muncipal Individual Connection
Use other Sources Also


Primary source of Water - Caste wise distribution
60
50
40
30
20
10
0
General
SC
ST
OBC
Municipality Individual coneection
Community stand post/ Handpump

Efficiency of supply

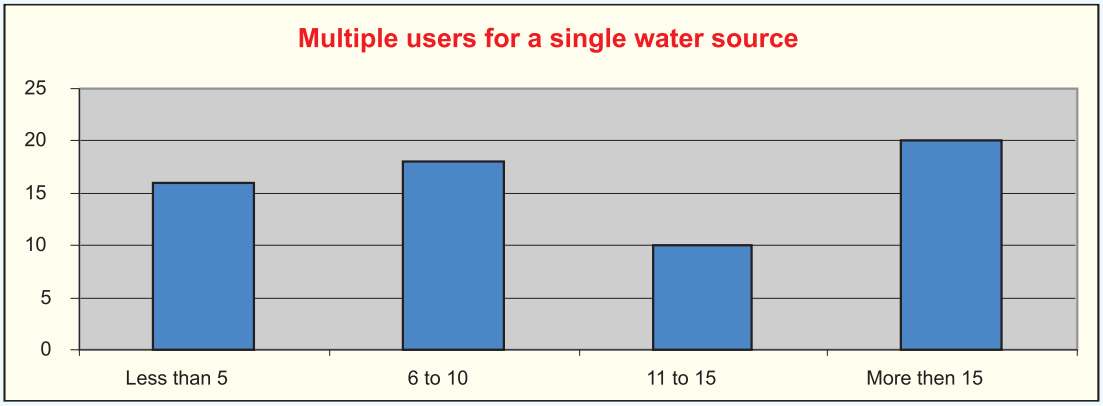
However, having a municipal connection does not ensure regular access to water, since the efficiency of municipal supply varies from town to town. In Sehore, 80% of households with municipal connections use other sources of water as well. Some other towns are more efficient. For instance, nearly all municipal connection holders in Tikamgarh and Ajaygarh use it as their only source of water, although the coverage of piped water supply is extremely low in the latter town at 12%.

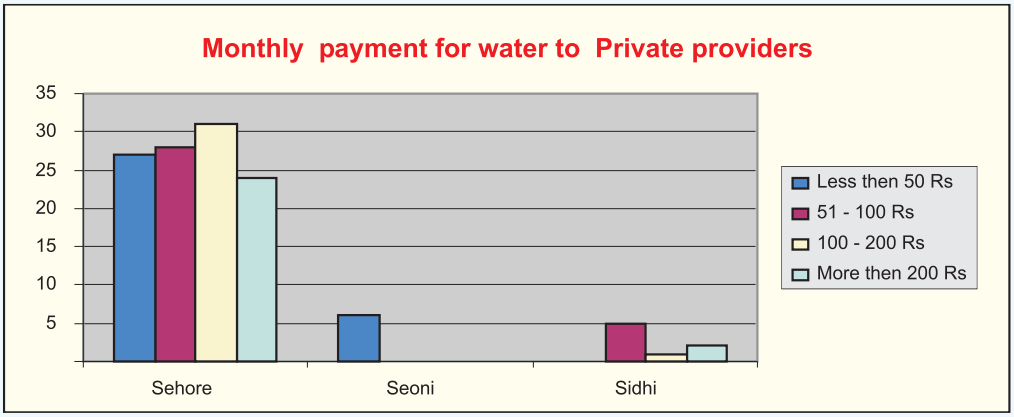
The number of household dependent on a single water source (hand pumps or dug wells) is lowest for Sidhi and highest for Seoni. 45% of respondents in Sidhi confirmed that water sources are shared by 10 or more users. Against this 30% of respondents in Ajaygarh said that between 15 or more users share a single water source, the figures being 20% and 9% for Sehore and Tikamgarh respectively.

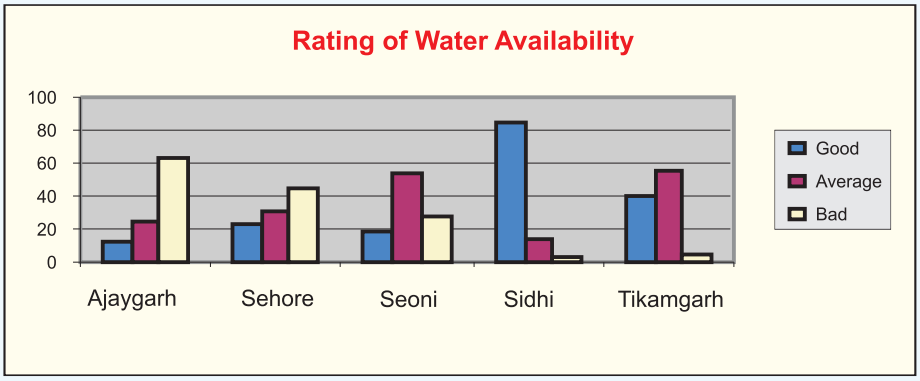
Purchase of water from private providers is not very common in most towns, except for extremely water deficient towns like Sehore, where one-third of the residents purchase water, often at very steep rates, although the percentage that depends on water tankers as the primary source of water is miniscule.

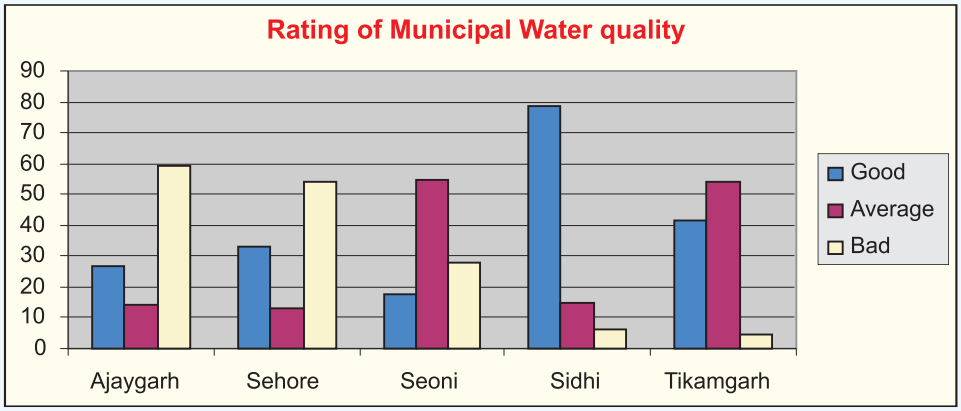
Satisfaction levels

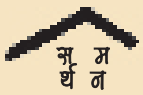
Municipal tap connections are not a determinant of satisfaction with availability of water. For example, while availability of municipal tap connections is low in Sidhi, satisfaction with water availability is high at 80%. In contrast, only around 40% of respondents in drought hit towns like Ajaygarh and Tikamgarh rated water availability as good. Even where availability levels are reasonable, some towns perform poorly on quality of water, thereby bringing down the overall satisfaction level.


Multiple users for a single water source
25
20
15
10
5
0
Less than 5
6 to 10
11 to 15
More then 15


Monthly payment for water to Private providers
35
30
25
20
15
10
5
Sehore
Seoni
Sidhi
Less then 50 Rs
51 - 100 Rs
100 - 200 Rs
More then 200 Rs


Rating of Water Availability
100
80
60
40
20
0
Ajaygarh
Sehore
Seoni
Sidhi
Tikamgarh
Good
Average
Bad


Rating of Municipal Water quality
90
80
70
60
50
40
30
20
10
0
Ajaygarh
Sehore
Seoni
Sidhi
Tikamgarh
Good
Average
Bad



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