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# MUNICIPAL CASE STUDIES

**EDITOR'S CHOICE: 25 CASE STUDIES  
ON MUNICIPAL WATER & WASTEWATER PROJECTS**

**SPECIAL  
EDITION**





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# TOP 25 MUNICIPAL CASE STUDIES

Collector's Edition: Top-25 Case Studies on "Municipal Water & Wastewater Management" selected on the basis of their applications, locations, product/technology involved, and relevance.

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# THE ECOLOGICAL REJUVENATION OF RAAMSAGAR LAKE

In this reservoir revitalization case study, an attempt has been made to show every water sample taken throughout the month by simultaneously showing the change occurring.

By Madhukar Swayambhu

**T**oday, Baloda Bazar city is a Nagarpalika Parishad in Baloda Bazar district in the state of Chhattisgarh, India. On 15th August 2011, it was declared as a district. Baloda Bazar is also called “the cement hub” of Chhattisgarh. The geographical location of Baloda Bazar Nagar is on the height of 270 m from sea-level, between 21.300 54' to 31.450 14' North Latitude and 42.020 17 'to 82.290 07' East Longitude. While it belongs to Raipur division, the border of Baloda Bazar district touches Bemetara, Mungeli, Bilaspur, Jajgir, Raigarh, Mahasamund, and Raipur districts.

## THE BACKGROUND

Baloda Bazar is quite an unusual name for a city and a district.

But it got its name due to the huge cattle market that it was famous for. According to the prevalent tradition with respect to the name of the Balouda Bazar, traders of Gujarat, Haryana, Maharashtra, Orissa, and Barar, etc used to gather in the buffalo pahra of the city to sell the bulls, buffalo (boda). As a result, its name became popular in the name of the bullboda market and in the form of the Balouda Bazar. Although, the market still exists with the name “Bhaisa Pasra”. Purani Basti or the area adjoining the Mawli Mata Mandir is the oldest area of the town, but not as graceful as it used to be in its prime when it used to exist on the embankment region of the famous RaamSagar Lake.



BALODA BAZAR MAP

And this is the story of the same RaamSagar Lake that was once synonymous to the bazar in its entire glory and opulence.

## THE PRE-TREATMENT CONDITION

On the local residents' account, it is believed and probably witnessed in their own eyes that during its prime days, somewhere till the early 1960s, the lake was not just beautiful, but was also the key source for all water-related activities for the town. It was well linked with canals and nearby rivers as the inlet feed and outlet channels and the water was fresh enough for being used for all purposes from drinking to bathing, cooking to washing, irrigation, animal husbandry, recreation, swimming, and whatnot. But by the mid-70s, the water body was given on lease by the administration for fishing purposes.

Eventually, the inlet and outlet channels were also closed and encroached for building

properties. The small town got developed into a city and then a district while the water body was eventually getting neglected. The administration made some efforts and got it cleaned in 1992, and later with further investments were done and auxiliary beautification of the embankment area was done. The pavements were created, walkways were built around the lake for morning and evening sprawls, benches and other structures were installed, streetlights and fountains were

instated but the water quality kept deteriorating from bad to worse. As per the local residents' statements collected by the project team (while surveying for their opinions) it had finally reached the level where it was before the treatment. And the key issues included:

- The lake had become the key source of foul decaying smell in the vicinity. The water was full of microbial infection to the extent that even touching of



WATER COLOR AFTER SECOND TREATMENT ON 17TH OCTOBER 2019





WATER COLOR AFTER FOURTH TREATMENT ON 22ND OCTOBER 2019

water was a cause of massive itching on skin.

- Heavily infested with huge aquatic insects, which latched on to hand or clothes or whatever was put in water, thus many people thought twice even before washing clothes or utensils in this water. There was a time, when the administration used to give the lake on lease for the fishery, but now there was not even a single fish left in the lake.
- It was filled with layers of algae and water weeds to the extent that washing a white cloth in this water would take a green shade. In summers it got almost dried and gets filled up only when monsoons bring more water to it, since there were no inlet or outlet channels left.
- The lake is nothing more than merely a breeding ground for mosquitoes and diseases, if not treated and restored on a war footing, this would result in a key-source of an outbreak of an epidemic.
- Water had turned dark green, highly viscous, smelly and unpleasant. It had a very negative aura, instead of the source of energy that it used to be in its heydays, it had become the source of sadness and diseases. With such a condition, the district administration took a call for restoring and rejuvenating the water body to its original glory and natural condition in an ecological way through Cownomics© technology that was already tried and tested in other

districts.

#### THE PROJECT BRIEF

- Project Name: Restoration and Rejuvenation of RaamSagar Lake
- Address: Kasdol, Baloda Bazar, Chhattisgarh
- Map Location: 21.6172°N, 82.4280°E
- Surface Area: 5.81 Acres
- Technology: Cownomics© Technology
- Date of Commencement: 2nd October 2019
- Duration of Treatment: 1 month
- Date of Completion: 2nd November 2019
- Objective: To make the water body good for "Nistari"

#### THE PROJECT EXECUTION

While the initial treatment commenced on 2nd October 2019, the birth anniversary of the Father of the Nation and also the auspicious occasion of "Swachchhta Diwas", but for the want of some paper formalities and administrative coordination, the regular consistent treatments started on 14th October 2019. The water samples, taken merely after 24 hours of the 1st treatment on 3rd October 2019, practically passed all the parameters prescribed by the CPCB standards, but it wasn't good enough for the user satisfaction, although the local residents of the vicinity were quite still pacified since their key



issue of the consistent foul smell was taken care of with the first treatment itself, but the other symptoms of the water body ailments remained.

The look and the feel of alive water was missing, as the color was still dark, viscosity was still high, aura was still negative, and aquatic insects were still there.

Thus, the project restarted from 14th October 2019.

With every treatment dosing the conditions were improving.

By the fourth treatment, the beneficiary satisfaction was already achieved and there was a paradigm shift in the perspective and attitude of the people towards the water body.

By now the ecological dredging process had started and was visible since the water was

less viscous and odorless, but still the algae, solid, and plastic waste that was submerged underwater was resurfacing, that was physically removed by the administration.

Mosquitoes were almost absent by now and there was a massive reduction in the number of aquatic insects who used to rule the water body just about 2 weeks ago.

By now people were confident enough for using water for bathing, washing utensils, and clothes.

The administration was also much more confident of the user experience than the laboratory tests of the water quality, since the look and feel parameters of human experience were proven to be of much higher standards

### PROJECT FILE

**CUSTOMER:** NAGARPALIKA PARISHAD, BALODA BAZAR

**LOCATION:** CHHATTISGARH, INDIA

**SERVICE PROVIDER:** VEDIC COWNOMICS PVT. LTD.

**PRODUCTS/TECHNOLOGY INVOLVED:** COWNOMICS© TECHNOLOGY



than the laboratory parameters, which had given a "good quality" results just within 24 hours of the first treatment.

to spot the differences.

Therefore, in this reservoir revitalization case study for this astonishing revelation,

the synthesis. But when the amount of pollution increases beyond that threshold, the water starts to get sick.

and governance. He has been a top management executive for various multinational equipment manufacturing companies including Allied Telesis, D-link, and Zyxel to name a few. The environment, ecology, vedic sciences, Sanskrit and Indic knowledge has been his passion for all these years and therefore along with his associates he used to study and discuss these subjects offline, outside of his professional commitments. This passion started taking some formal shape in 2011 and later on the research and studies continued along with the profession. By 2014, the R&D and studies had taken some shape to create a formal legal entity. In the year 2016, they decided to take a full-time plunge and convert their passion into a profession. **Vedic Cownomics Private Limited** is a result of this journey in which "They make ecology alive".



**“Often in the treatment process, subtle changes in the large reservoir are not observed, unless the observer has eyes which are experienced enough to catch these small but significant ecological changes.**

#### THE PROJECT COMPLETION

Often in the treatment process, subtle changes in the large reservoir are not observed unless the observer has eyes which are experienced enough to catch these small but significant ecological changes. The people having a close relationship with a water body, who have been seeing the same water body for years through its prime time to its deterioration, are able to see through these changes of look and feel, but those who have just seen it once would find it difficult

an attempt has been made to show every water sample taken throughout the month by simultaneously showing the change occurring.

It can be observed in the last image, how as the treatment process progresses, the color of the sample becomes lighter and eventually approaches its natural tone and texture. Although this color will be different in each water body, as the soil and aquatic ecology and biodiversity of each water body is different, still the difference between the colors being dark to lighter tones can easily be differentiated in the picture.

In the same proportion, water also becomes lighter (less viscous) and healthier.

The aquatic food chain which ceases to exist in dead water, returns naturally in the healthy living water, and so does the natural electrolytes balance too. The aquatic ecosystem is thus self-healed from any chemical pollution or biological contamination, self-nurturing, and keeping healthy. It runs smoothly, as long as the amount of pollution remains lower in proportion to the efficiency of

Hence, treatment is simply the restoration of ecosystems, in which all chemical, biological and physical remedies fail. Hence the Cownomics© method is the only method in which there is a complete simulation of the overall ecosystem, therefore it has proved to be a sustainable, effective and result oriented method.

#### ABOUT THE AUTHOR Madhukar Swayambhu

has been an IT professional for 25 years in the industry, and in the communication networking domain working on some of the most prestigious communication networks of the country from national internet backbone that provides the internet facilities to the country today, to the network for education, defence services, railways, various PSUs' core network, police in various states, intelligence

