

## **A Zoroastrian view on conservation of natural elements: *Tankas* of Bharuch.**

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### **Overview**

Cities are living organisms. In order for cities to remain sustainable it is necessary for them to remain within a capacity to regenerate their natural sub systems. The rapid physical expansion of cities, especially in the developing world, has encroached upon the vast resources of air, water, flora and fauna of the hinterland, which is an essential requirement for maintaining the environment in a holistic and organic manner.

The loss of traditional water harvesting systems in India has led to an alarming drop in water supply in Indian towns. Today, these rapidly vanishing systems assume significance for we are facing a shortage of global magnitude. It is hence important to consider the potential of rejuvenating some traditional water systems. In the Indian context, a potent way of propagating water preservation is through drawing upon traditional religious and cultural practices. This paper looks at some examples of Zoroastrian houses in Bharuch which still follow the tradition of Tanka water harvesting.

India has a wide range of ecological regions ranging from hot dry to temperate regions. See figure 1)

Except in the cool green of the mountains, much of the country gets hot during a long summer, broken by a brief monsoon. India's regions have, over the years, evolved methods to make the best use of limited water. Cultural practices ensured appropriate collection, storage and distribution, while checking wasteful misuse of water.

In many small towns of India, as in Afghanistan and Iran, the persons associated with the indigenous water works, digging canals *Qunats* of Iran, constructing tanks and dams including the '*Gabarbands*' or the system of check dams of Afghanistan, were regarded as the true heroes of the community. The Zoroastrian links are strong in Central Asia; the *Gabarbands* are named after the word, *Gubere*, a derogatory term for the Zoroastrians in medieval Persia.

In India there is a strong belief that dredging a temple tank is one of the noblest acts a man can perform. Similarly, the basic tenets of Zoroastrianism hold all creations as sacred, especially water.

### **Harvesting water for survival.**

Both in India and in Iran traditional settlements respected ecological sustainability by optimum use of food, water, firewood and all natural resources. The designs of human settlements were an ecological statement, man and the elements of nature co existing harmoniously. Water storage drew upon various devices such as wells, ponds, reservoirs, dams and streams. **1**

Rainfall in India is seasonal, spread over roughly three months all over the country. The runoff is swift and heavy. For this reason, rainwater harvesting was as common a practice as the harvesting of the fields for food. The principle of rainwater harvesting is to collect and store water where it falls. Many towns in the arid region of Rajasthan and parts of Gujrat optimised this system of water catchment of a large watershed for the community's needs.

The 'temple towns' of South India such as Madurai and Kanchipuram had huge tanks in the heart of the town, managed by a temple trusts. Cities such as Nainital and Udaipur had their beginning as habitations clustered around lakes. Towns located on rivers included Delhi, Mathura and Brindavan on the Yamuna, Allahabad, Varanasi, Patna, Calcutta on the Ganges and Ujjain on the Kshipra, with well defined '*ghats*', or terraced riverfronts for social and religious activities. Forts wherever constructed, Chittorgarh, Jodhpur, Bikaner in Rajasthan or Ahmedabad, Rajkot, Junagarh, Jamnagar in Gujarat, contained a combination of tanks, step wells and lakes as major features. Today these systems have been rendered redundant due to mindless development causing flooding, drought and associated problems.

Rivers and lakes were named after gods and goddesses, depicted as residing in or close to water bodies. So, the water was venerated with rituals and offerings. Step wells have been constructed in India both by Hindu as well as Muslim rulers. Essentially the same in nature, they vary only in the level of decoration and ornamentation, reflecting the cultural importance of water in the pan Indian tradition.

## Zoroastrianism and Water

The Zoroastrians, a micro minority better known as the Parsis, migrated to India in the 8<sup>th</sup> Century AD to escape religious prosecution in Iran. As Indo Aryans they share many practices with those of India. The Zoroastrian tenet of *Asha* or harmony, celebrates the sacred nature of the elements i.e. fire, water, earth and air. The rapidly disappearing predawn ritual of the *Yasna*, is a daily prayer ritual that honors all creation by drawing a sample of water from the well and returning it back to the source after the religious act of consecrating the same. This ritual with its combination of water, earth, fire, air, the animal kingdom and man energizes the whole *Spenta* or Bountiful creation every day.

The Zoroastrians treat water not just as a life giving entity but as a living element, guarded by a guardian angel, Ava. It is considered improper to 'disturb' water at night. Water bodies are to be respected not polluted. Offerings of flowers and sweets are made to water especially on it's 'birthday', the '*Ava parab*', which celebrates the sanctity and importance of water even today.

We see from Prophet Zarathushtra's own words, uttered over 3000 years ago, ideas that still have great relevance. In the *Gathas* (*Ys.* 29) Gaush Urva, the Soul of Creation, calls out in anguish for a saviour. Zarathushtra comes to earth to ensure total justice and righteousness for all creation. He preaches the divine law of Asha or Cosmic Truth, which is not just for human beings but for every aspect of creation. Every aspect of being must be treated with justice, such justice ensures harmony. Harmony can only be possible when there is no exploitation or degradation of creation. In the 21st century, we are still struggling to achieve human rights. In the Bronze Age, Prophet Zarathushtra spoke of the rights of plant and animal, mineral and waters, of reverence and nurture of all *Spenta* Creation.

Zoroastrians regularly offer prayers to *Ava Yazata* -the guardian of waters. In Iran, the water harvesting and wind towers of the Zoroastrian settlements around Yazd continue Bronze Age traditions. Legends of the Oral tradition come together on the occasion of *Tirgan*, in praise of *Tir Yazata* who brings rain during the heat of summer. *Adar Roj*, honouring fire, *Bahman Mahino*, paying respect to the animal world are just a few examples of the interconnectedness of all being. The festivals, rituals and texts of Zoroastrianism thus exemplify Zoroaster's holistic vision and environmental consciousness.<sup>2</sup>

The Zoroastrian Calendar, its rites and rituals, thus stress environmental awareness teaching a holistic approach to daily life through the interweaving of all aspects of Ahura Mazda's Good Creation. Reverence, care and compassion for the earth are inculcated primarily through the theology of the Amesha Spenta and Yazatas, divinities after whom each day of the month and each month of the year is dedicated. *Spenta Armaiti*, "Bounteous Devotion", *Haurvatat*, "Health" and *Ameretat* "Immortality" are the last three Amesha Spenta. Armaiti is the constant companion of the Zoroastrian, for only through devotion can man travel to God. She is identified with the Earth Mother and at death man is left in her care.

The twin spirits of Health and Immortality are always spoken of together in Zoroaster's *Gathas*. *Haurvatat*, spiritual wholesomeness or Health is the perfection of life and *Ameretat* or Immortality is the freedom from death, which inevitably accompanies perfection. Water, upon which all life depends, is assigned to *Haurvatat* and the plant Kingdom comes under the care of *Ameretat*. Because Health is the perfection of man's life on earth, and Immortality the eternal reward for the soul in the next world, these twin divinities grant happiness now and forever.

Zoroaster assigned man to the care of Ahura Mazda Himself - through His Holy Spirit *Spenta Mainyu*. Thus, through the doctrine of the Amesha Spenta, Zoroaster weaves together the abstract and the concrete, material and spiritual, once against stressing the harmony that is the ultimate goal of life.

On a practical level these spiritual teachings have been given material form in the Tanka system of water harvesting among the Parsis of Bharuch. One can see a level of devotion and care in the construction of water related elements as was bestowed on temples, and palaces. Be it an embankment of a 'ghat', a step well, or a tank in India or the covered water tanks in Iran. The architecture is extremely rich and meaningful. "This, for someone not from the desert, might seem extravagant and excessive but once the value of water is realized one can appreciate the manifestations in construction to hold and access it"<sup>3</sup>

## **The Tankas of Bharuch**

The system of collecting rain water falling on your roof top, locally know as the “tanka” is still practiced by a handful of persons, mainly the Parsi Zoroastrians. In India, as uncontrolled development took place blocking or altering the natural path of flow of water channels, most traditional systems of water harvesting lost importance. The British system of planning saw water as a centralized service, with little understanding of the socio cultural significance of traditional water systems. All this has made the issue of water supply in the towns of India one of the most crucial problems of today.

All the tankas we have studied are very old structures –nearly or more than 100 years in age. In the arid state of Gujrat, water has always played a very dominant role in the socio-cultural life of people. Perpetual shortage of water has inspired people to appreciate the value of conserving and storing this resource in all conceivable ways. Bharuch, a small town (population 1,50,000 as per the 2001 Census of India) though situated on the river Narmada, shows dependence on ground water for it’s survival. Like many other rivers in India the flow in the Narmada in summer is minimal and pollution levels high. Bharuch today exemplifies the small Indian town in many ways. The municipal water supply, at best is just enough to cover basic needs of the people. Long queues at public distribution sites indicate the shortage. Over dependence on well water has rendered many wells brackish, the water table has fallen sharply. In such a situation, the Tanka is of great benefit.

The ‘Tanka’ is an underground tank, accommodated inside the house, preferably under the kitchen or dining room, made of chiseled blocks of stone, in lime mortar, unlined but made waterproof by an indigenous herbal mix. The ingredients of this mix is not recorded but the aim of this mixture was not only to render the inside surface waterproof and seal minor cracks but also to prevent bacteriological growth inside the tanka.

The size of the tanka is large enough to store sufficient drinking water for a family for a period of six to eight months. An average storing capacity of a tanka is around 25,000 litres. Some tankas are virtually like independent cellars with 8 to 10 feet of filling over them. With sizes reaching nearly 20 feet by 60 feet and heights of 12 feet, arches and vaults were needed to support the earthwork and the superstructure on top of the tanka.

Since the bottom of the tanka was well below the lowest level of the house, there is no outlet for water provided; when required to be cleaned it must be emptied manually. Almost all tankas are large enough for people to enter and walk about inside. The tanka floor slopes into a sump right under the point from where the water is drawn out.

The tanka feeds on the rainwater collected through roof runoff. A simple system of collection, via a 3” to 4” pipe, depends on successive sumps whose water is collected and overflows on its way to the tanka. Settled impurities are flushed out thru an overflow pipe.

In fact, the complete water runoff of the first couple of days of the rainy season, is just made to run down the overflow pipe, ensuring a maximum cleaning of all surfaces in contact with water. We have recorded that the Parsis learnt how to discern water purity during the monsoon by a system of gathering it in several glasses and examining this water by sight, smell and taste every day once the monsoon had started.

Once the owner is certain of the cleanliness of the rainwater, the overflow is plugged. This starts to direct the flow of the water into the tanka. The tanka has a hatch cover which is kept closed except for the time when water is needed to be pulled out as out of a well, by a bucket on a pulley.

The water retention capacity of these tankas, is measured in the form of a particular ‘danger level’ indicated inside the tanka by the depiction of a sculptured ‘fish’ along the inlet neck of the Tanka. Filling the tank above this mark was considered dangerous as the hydraulic pressure inside may well exceed the retaining capacity of the tank wall.

The tanka is filled gradually till the ‘fish’ mark and the water stored away to be used long after the rains have stopped. The clean conditions of collection, storage and once in a while ventilation by opening the hatch, which is so placed that direct sunlight never enters the tanka, and using the water judiciously makes the tanka water a most precious resource specially in the hot summer months. Most owners clean the tanka only once in 5 to 10 years. The water quality has been tested and found to be of potable quality by WHO standards.

During collection, several prayers are recited to Ava Yazata and it was believed that only Zoroastrians should work on the creation or cleaning

of the Tanka. However in later years other communities too have participated in the creation and cleaning of the Tankas. Parsis in Bharuch till today trust only Tanka water and often will not drink water from other sources. Each evening an oil lamp is lit outside the Tanka, prayers and flowers are offered to this precious water resource which not only provides drinking water but also keeps the entire household cool during the hot summers.

The system survives today due to the sheer belief and tenacity of the few people who use it. It is disheartening to know that there are others in the town who consider the presence of the tanka in the house a nuisance and would rather have it filled up or permanently closed off. In fact new owners completely demolish old homes, including the tanka, and rebuild in the 'modern-Bombay style' flats.

### **The need of the hour**

This destructive attitude has taken a heavy toll on the social, cultural and heritage front. Historical buildings of heritage value lie unprotected and vandalized. Traditional water systems depended heavily on the coordinated operation of society. Society at large must recognize and care for traditional systems. The easy availability of municipal water and a lack of community feeling among the residents have combined to destroy the water harvesting systems. Public awareness and education in this regard is of extreme importance. It will need an effort much beyond mere rules and legislation to set things right. Perhaps a divine intervention is needed in this world of global warming.

Zoroastrians believe that to restore the world to its perfect stage, *Ahura Mazda*, the Creator, needs the help of all beneficent being and finally this will culminate in the *Frashokereti* or Renewal of existence when all wounds heal and evil is destroyed. The rituals of the Zoroastrian religion, some of which have survived from pre-history, are therefore concerned with the nurture and protection of all creation and the need to preserve it from destructive evil.

If ever an intervention was required to bring man and nature together again in our world, it is now. The message is very clear that issues of common concerns –issues such as water supply- will need to be tackled jointly by the government and the people together at a global level.

If neighborhood social organisations with a little help from Non Govt. Organisations (NGO's) get into the act even now, they could find a few systems of water storage that can be rejuvenated. The efforts of

PARZOR, the project initiated by UNESCO to document and conserve the traditional practices and customs of Parsi Zoroastrians in India are important in this context. “Only when the whole or a unit of continuity which has been destroyed by the presence of conflicting factors has been restored in *another* whole.....can we claim validity for our procedure.”<sup>4</sup>



## References.

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2. Shernaz Sethna Cama "*Asha: The Law of Harmony, A Study of Environmental Consciousness in Zoroastrian Rituals*", New Delhi, 2002.
- 3 Kulbhushan & Minakshi Jain, *Architecture of India's Desert* – AADI Center Ahmedabad – India..
4. Sidney Hook, *From Hegel to Marx*, London,1936.

## Maps and illustrations.

- XYZ1** Map of India showing the climatic zones.  
**XYZ2** Entrance to the Adalaj stepwell Ahemdabad,Gujrat.-All photographs Rajiv Rastogi  
**XYZ3** Views of the Adalaj stepwell Ahemdabad,Gujrat  
**XYZ4** Steps to *Rani-ki -bawli*  
**XYZ5** Entrance to the Dada Hari stepwell near Ahemdabad,Gujrat

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