

# Impact of Sarasvati river researches

The successful search for the lost river Sarasvati has yielded the following 10 results; I will outline each of them and explain in some detail.

1. The hindu civilization tradition which celebrates the confluence of three rivers: Ganga, Yamuna, Sarasvati every twelve years as Kumbha mela has been proven to be ground truth based on scientific studies. The discovery of the entire 1600 km. long course of the river validates the geographical and socio-cultural information contained in many ancient texts.
2. The search has resulted in over 1000 scientists and engineers getting involved from a variety of scientific disciplines: earth sciences such as geology, hydrology, glaciology, oceanography, ocean technology, seismology, archaeology, study of ancient texts, archaeo-metallurgy, studies related to flora and fauna including domestication of crop cultivation, archaeo-botany, archaeo-zoology, genetic studies. All these studies have confirmed the discovery of the courses of River Sarasvati.
3. River Sarasvati is a foundational ethic of hindu civilization. Ancient rishis and munis and authors of the two great epics, Ramayana and Mahabharata write about Sarasvati in ecstatic terms and call the river a mother because she sustained the early formation and evolution of Hindu civilization on her banks. This is validated by the discovery of over 2000 or over 80% of the archaeological sites along the Sarasvati River Basin.
4. What started as a proto-historic quest has become an unprecedented development opportunity. It has been proved that even though the Himalayan glacial River Sarasvati got desiccated about 4000 years ago due to plate tectonics and resultant river migrations, at a depth of just 30 to 60 meters, enormous quantities of groundwater aquifers have been discovered. In the central river basin in Rajasthan desert alone, it is possible to have one million tube wells to make available water to over 20 crore people.
5. Bharatiya engineers and scientists using satellite images of IRS 1-C, 1-D, Cartosat have proved the possibility of rebirth of River Sarasvati. Work has been completed for about 1000 kms. using the waters dammed on Sutlej at Bhakra-Nangal dams and on

- Beas river at Pong dam and creating a Sarasvati Nahar which has now reached upto Gedra Road in Barmer Dist. Another 150 kms. the Manasarovar glacier, Mt. Kailas waters will reach the water-starved Rann of Kutch. This newly constructed river link has brought into cultivation about 5 acres of land in the Indian desert and provided an impetus for setting up a National Water Grid converting every river, particularly the rivers south of Vindhya mountains: Godavari, Krishna, Palar, Pennar, Kaveri, Vaippar, Gundar and upto Kanyakumari as perennial rivers. This will bring forth a veritable revolution in the lives of 100 crore people of Bharatam, that is India.
6. Sarasvati researches have shown the need for an interdisciplinary approach to the study of civilizational heritage. Today, history will be written by scientists: earth scientists, biological sciences, genetic studies and scholars studying ancient texts and national traditions.
  7. Sarasvati discovery has led to a re-thinking on and re-writing the history of formation and evolution of bharatiya or Indian languages in a linguistic area. A linguistic area is a region where many language speakers interact and absorb language features from one another and make them their own.
  8. Sarasvati discovery has demolished the Aryan Invasion Theory postulated since the 18<sup>th</sup> century as a myth, a propaganda based on a racist, eurocentric perspective. All evidences point to the indigenous formation, evolution and continuity of Hindu culture for over 7 millennia. Just as physical sciences accepted and rewrote the physical laws after discoveries by Albert Einstein on Relativity Theory, it is necessary to rewrite the cultural history of over 100 crore people in Bharatam, that is India.
  9. Lastly, Sarasvati discovery has rejected Creationism and Tower of Babel which formed the foundations of belief systems which created the Aryan Invasion Theory. The rejection is accomplished by using genetics and other scientific disciplines establishing the roots of Hindu civilization on the banks of River Sarasvati in the Saptasindhu region (region of seven rivers) and of five peoples (Pancajanaah).
  10. Now we are able to understand why Sarasvati is venerated in many forms: as mother, as river, as devi (divinity of education, arts and crafts of wisdom) inspiring the people to

live by dharma and for abhyudayam, that is, general welfare. She is sacred, she is mother because she nurtured and continues to nurture Hindu civilization and the people living on her banks have given us the great texts starting from the Veda. Veda is from root, vid, 'to know'; the same root yields, vidya, 'education'. Sarasvati provides the inspiration for new bharatiya civilization studies in various facets such as language, music, dance, arts, water management, metallurgy, indigenous medicine and knowledge systems. This vidyaadevi will now be venerated as a river, giving life-giving waters inspiring the creation of an addition 9 crore acres of wet land with assured irrigation to realize India Vision 2020 as a developed nation in the comity of nations.

A remarkable sukta in Rigveda is presented as from Vaagaambhrini (a component of the name is Vaak, another form of Sarasvati devi). She explains the term rashtra.

*Using the feminine form Rashtree, she elaborates the components of rashtra: Sacred land, Nation, Land of dharma (Maatrbhumi rina dharma)*

I am rashtree. I, knowing Brahman non-separate from me, collector of various forms of wealth, am the most important amongst the divinities fit for yajna. I am present in all the things existing . I have entered in all the things born. Gods, staying in many places, whatever they do, they do for me.

*अहं राष्ट्री संगमनी वसूनां चिकितुषी प्रथमा यज्ञियानाम् ।*

*ताम् मा देवा व्य अदधुः पुरुत्रा भूरिष्ठात्राम् भूयर् आवेशयन्तीम् ॥*

*r.s.i: va\_ga\_mbhr.n.i\_ ; devata\_ : va\_ga\_mbhr.n.i\_ (a\_tmastuti);*

*11.10.125.01 I proceed with the Rudras, with the Vasus, with the A\_dityas, and with the Vis'vedeva\_s; I support both Mitra and Varun.a, Agni and Indra, and the two As'vins.[Deity Prama\_tma\_ : the word, or first of creatures].*

10.125.02 I support the foe-destroying Soma, Tvas.t.a\_, Pu\_s.an and Bhaga; I bestow wealth upon the institutor of the rite offering the oblation, deserving of careful protection, pouring forth the libation.

10.125.03 I am the sovereign queen, the collectress of treasures, cognizant (of the Supreme Being), the chief of objects of worship; as such the gods have put me in many places, abiding in manifold conditions, entering into numerous (forms).

10.125.04 He who eats food (eats) through me; he who sees, who breathes, who hears what is spoken, does so through me; those who are ignorant of me perish; hear you who have hearing, I tell that which is deserving of belief.

10.125.05 I verily of myself declare this which is approved of by both gods and men; whomsoever I will, I render formidable, I make him a Brahma\_, a r.s.i, or a sage. [A Brahman: Brahma\_, the creator].

10.125.06 I bend the bow of Rudra, to slay the destructive enemy of the Bra\_hman.as, I wage war with (hostile) men. I pervade heaven and earth.

10.125.07 I bring forth the paternal (heaven) upon the brow of this (Supreme Being), my birthplace is in the midst of the waters; from thence I spread through all beings, and touch this heaven with my body.

10.125.08 I breathe forth like the wind giving form to all created worlds; beyond the heaven, beyond this earth (am I), so vast am I in greatness.

अ॒हं रु॒द्रेभि॑र् वसु॑भिश् चराम्य् अ॒हम् आ॑दित्यैर् उ॒त वि॒श्वदे॑वैः ।

अ॒हम् मि॒त्रावरु॑णो॒भा वि॑भम्यूर् अ॒हम् इ॒न्द्राग्नी॑ अ॒हम् अ॒श्विनो॒भा ॥

अ॒हं सोम॑म् आ॒हन॑सम् वि॒भम्यूर् अ॒हं त्वष्टा॑रम् उ॒त पू॒षण॑म् भ॒गम् ।

अ॒हं द॑धामि॒ द्रवि॑णं ह॒विष्म॑ते सु॒प्राव्ये॑ यज॑मानाय सु॒न्वते॑ ॥

अहं राष्ट्रीं संगमनी वसूनां चिकितुषीं प्रथमा यज्ञियानाम् ।  
ताम् मा देवा व्य् अदधुः पुरुत्रा भूरिष्ठात्राम् भूयूर आवेशयन्तीम् ॥

मया सो अन्नम् अत्ति यो विपश्यति यः प्राणिति य ईं शृणोत्य् उम् ।  
अमन्तवो मां त उप क्षियन्ति श्रुधि श्रुत श्रद्धिवं ते वदामि ॥

अहम् एव स्वयम् इदं वदामि जुष्टं देवेभिर् उत मानुषेभिः ।  
यं कामये तं भतम् उग्रं कृणोमि तम् ब्रह्माणं तम् ऋषिं तं सुमेधाम् ॥  
अहं रुद्राय धनुर आ तनोमि ब्रह्मद्विषे शरवे हन्तवा उ ।  
अहं जनाय समदं कृणोम्य् अहं द्यावापृथिवी आ विवेश ॥  
अहं सुवे पितरम् अस्य मूर्धन् मम योनिर् अप्स्व् अन्तः समुद्रे ।  
ततो वि तिष्ठे भुवनानु विश्वोतामूं द्यां वर्ष्मणोप स्पृशामि ॥  
अहम् एव वात इव प्र वाम्य् आरभमाणा भुवनानि विश्वा ।  
परो दिवा पर एना पृथिव्यैतावती माहिना सम् बभूव ॥

Why do people climb mountains?

Why do we send a Mars mission using the technological brilliance of NASA scientists and engineers?

Why do we search for a lost river, a river which is remembered for millennia in a vast nation?

A basic quest for knowledge. This in fact is the meaning of the term, Veda. It comes from the verb root: vid, to know. This root is also the basis for the word, vidya which means education. Sarasvati is also called Vidyaadevi or Vaakdevi, the divinity of education and speech. Thus, Sarasvati is a metaphor for knowledge systems.

After all, river banks and coastal regions provided friendly habitats for early ancestors of our civilization.

We inquire about our roots, where we come from and who were our ancestors and what were their points of view related to knowledge systems?

What started as a historical quest has resulted in a developmental opportunity by making the River Sarasvati flow again, create a National Water Grid in India and encourage fresh culture and language studies.

Rather than believe in Creationism or Tower of Babel mentioned in the Genesis, we can use scientific methods of research to document the past. It is surprising that during the 18<sup>th</sup>, 19<sup>th</sup> and 20<sup>th</sup> centuries, the British colonial regime created a myth of Aryan invasion based on Creationism and Tower of Babel. These are cited as the bases by early researches such as William Jones, Abbe Dubois, Max Mueller.

The bases of the Creationism legend were that in 4004 BCE: The world was created in six days. • In 2348 BCE: A flood submerged the apple orchard in the desert where humans inhabited. 600-year-old Noah escapes along with his 100-year-old son Japheth, goats, and other animals. •2200 BCE: The seven sons of Japheth (i.e., the seven Hindu sages mentioned in Hindu texts) lead one-third of humanity to the Caucasian region and populate it. There they build the world's first civilization called the Aryan civilization. Genesis 11 **6 and 7 are** cited as the authority for Tower of Babel hypothesis. **6** And the Lord said, Behold, the people is one, and they have all one language; and this they begin to do: and now nothing will be restrained from them, which they have imagined to do. **7** Go to, let us go down, and there confound their language, that they may not understand one another's speech. Japhet, Ham and Shem were three sons of Noah who

migrated after the great flood. Japhets are mentioned as the early ancestors of Hindus.

The rediscovery of River Sarasvati has exploded this creationism myth and the Aryan Invasion Theory used for 3 centuries to explain the evolution of civilization in India. The rediscovery of River Sarasvati has shown that the Hindu civilization arose indigenously and evolved indigenously with trade and cultural contacts over an extensive area spread from Himalayan foothills to Mesopotamia. This, in fact, was the largest and most extensive civilizations of the period ranging from 7<sup>th</sup> millennium Before Common Era. Almost all scholars agree that the early texts such as the Veda were constructed on the banks of the River Sarasvati in the Saptasindhu region of pancajanaah (Five peoples).

The rediscovery of River Sarasvati and the underlying scientific inquiries had helped in removing the distortion in history which was created by Aryan Invasion /Migration Theory based on Creationism and Tower of Babel. The search for the original homeland of Europeans has become a wild-goose chase governed by racism and eurocentrism. Scientific inquiries have helped remove such aberrations in scholarship and knowledge systems related to cultural history of people who today number over one billion in India.

The cultural continuity of the civilization which had its roots on the banks of River Sarasvati continue in India. This fact enables the study of formation and evolution of Indian languages based on interactions among these languages for the period from the 7<sup>th</sup> millennium Before Common Era. The writing system evidenced by hieroglyphs has shown that the underlying language was the early form of Sanskrit or Samskrtam which are the spoken Prakrits and a dialect referred to as Mleccha or Meluhha. Yudhishtira and Vidura, Yudhishtira and Khanaka the miner converse in mleccha according to the Jaatugriha parva of Mahabharata. Mlecchita vikalpa is the name of this writing system and is mentioned by Vatsyayana as one of the 64 arts which include the knowledge of languages (des'a bhaashaa jnaana) and the communication system using hand and finger gestures (akshara mushtika kathanam).

Remember a beautiful book by Alex Hailey called the Roots?  
Remember the number of episodes of Inca, American Indian, Mesopotamian, Egyptian, Chinese and Hindu civilizational history being shown on Discovery Channel or National Geographic Channel?

Remember how archaeologists set out to find Troy, yes, Helen of Troy, who was described in ancient texts?

Early navigators and explorers have explored the wonders of the world to understand the common legacy and heritage better and draw lessons for the present and future generations.

All history and all studies of civilization are contemporary. The results of the inquiries are a contribution to knowledge systems in a variety of disciplines.

We are left with a sense of awe and wonder on what our ancestors achieved with the limited tools and technologies at their disposal. The seeds sown by them have taken root and we are the legatees of that heritage.

What I have been talking about is about two events unprecedented in the history of human civilization. One is the discovery of River Sarasvati which validates the information contained in many ancient texts. Second is the rebirth of this Himalayan glacial river thanks to the brilliance of scientists and engineers. This was no ordinary river. This was a 1600 km. long river which had flowed for thousands of year prior to 4000 years ago. The average width of the river is a whopping 6 kms. Such a river had gone underground. Today, we know the reasons why this happened. Due to plate tectonics resulting in the earthquake of the type which struck Bhuj in Gijarat on 26 Jan. 2001. It was a massive quake which measured 8 on the richter scale on a scale of 0 to 10. Its energy release equaled the release of energy from detonation of 220 hydrogen bombs. The recurring quakes resulted in changes in the topography of northwest India creating a tilting slope towards to the northwest. This in turn caused migrations of river tributaries. Thus River Sarasvati got desiccated.

In the hindu tradition, Sarasvati represents knowledge systems and is adored as the metaphor for arts and crafts. She is mentioned in many

forms: as mother, as river, as devi (divinity) and as vaak (speech divinity). She is remembered with such sanctity that every twelve years a kumbhamela is held in Prayagraj, near Allahabad. The tradition holds that this largest gathering of humanity occurs at the confluence of three rivers: Ganga, Yamuna and Sarasvati. Today, we know that Ganga is real; Yamuna is real; why should Sarasvati alone be deemed to be a myth or legend? The past president of America, Bill Clinton made a sharp observation: what propaganda machinery existed in India to make tens of millions of people gather together at a specific place, at a specific time, every twelve years to take a dip in the Sangamam, the confluence of Ganga, Yamuna and Sarasvati? The propaganda machinery is samskriti, culture which is based on the sacredness of the Himalayan glacial waters which have nurtured a civilization for millions of years.

She has today become a metaphor for water management. In the desert area of Rajasthan and salty marshes of Gujarat in the Rann of Kuch, huge quantities of groundwater have been discovered at a depth of 30 to 60 meters. Groundwater specialists have showed that one million tube wells can be constructed using these waters in the central part of Sarasvati River Basin in Rajasthan alone.

Sarasvati has become a metaphor for creating a National Water Grid to achieve a four-fold increase in agricultural production by creating an additional 90 million acres of land with assured irrigation. This can truly empower the rural people since about 65% of the Indian population lives in rural areas. By increasing the productive wealth available through the distribution of land to 90 million rural families, the nation can be transformed into a developed nation, a vision referred to as India Vision 2020 by President Abdul Kalam.

200 engineers of National Water Development Agency have worked for the last 24 years and proved the feasibility of establishing a National Water Grid. Sarasvati will be a part of this Grid. The rebirth of River Sarasvati has given an impetus to putting this National Water Grid on a fast track for implementation. Within the next seven years, all rivers in peninsular India, south of the Vindhya mountains, can be converted into perennial rivers. The investigations have proved that there is no water resource crisis but only a water management solution. Himalayas are the greatest water tower in the world. The

total freshwater resources locked up in the glaciers account for 68% and the remaining resources come from groundwater, rivers, lakes, tanks and swamps. It is also possible to desalinate seawater using a nuclear power plant taken along the coastline on a barge to produce fresh water at a cost of 4 paise per liter. Four paise is equivalent to one/tenth of an American cent or penny. One penny is the cost of producing 10 liters of distilled water from the sea. Instead of creating wars for sharing water, the abundant water resources can be distributed equitably to reach the unreached and make the nation a veritable warehouse of food produce for the world. India can feed the world.

The inquiry project has brought together people from many disciplines. Geneticists have shown that using mtDNA (Maternal DNA) and y-chromosome (paternal genetic markers) it is possible to determine the genetic history of people from ancient times. Glaciology has emerged as a new discipline and enabled the study of the formation of dynamic Himalayas. Ocean technologists and oceanographers have been able to delineate the nature of raises in the sea level and incursion of the sea inundating coastlines and submerging islands. The riverine and maritime nature of early civilizations has been brought into focus. Botanists are studying the early domestication of crops and zoologists are studying the early domestication and migrations of cattle. Flora and fauna as components of civilization are getting increasing attention. Archaeologists with the assistance and guidance of geologists, geomorphologists, metallurgists, medical doctors (including dentists) and architects are putting together the stages in the evolution of civilization evolving from the stone age to the metals age and creating systems such as indigenous medicine systems, structures such as the rock-cut reservoirs discovered in Dholavira and Vidisha and the dams called gabar bands on Rivers of northwest India and the grand anicut on River Kaveri. Using NASA software to delineate the positions of planets on the sky 5000 years ago, the astronomical events described in the Mahabharata have been accurately dated. The Mahabharata war started on 22 November, 3067 BCE. New finding on Mahabharata astronomy Mahabharata as Sheet-anchor of Bharatiya Itihaas : Use of planetarium software to authenticate Veda Vyasa's observed astronomical events by Prof. Narahari Achar. On this date, the

planetary positions are seen to be exactly as those described in Mahabharata by Veda Vyasa.

A focus on Sarasvati River Basin has thus been an inter-disciplinary contribution to knowledge systems. As we reconstruct the socio-cultural history of the peoples of the river basin, we are benefited by the reconstructed history of science and technology including the knowledge of astronomy, herbals, their therapeutic effects, systems of yoga, architectural styles, metallurgical developments, irrigation and water management systems and formation and evolution of Indian languages.