WILL DEHRADUN REMAIN AS THE CITY OF PARADISE?

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"The scenery of those mountain dales can hardly be surpassed for picturesque beauty even among the lovely slopes of the massive chain to which they belong. The perennial streams nourish fresh and luxuriant vegetation, whilst the romantic hills to the South and the sterner mountains to the North give variety to the landscape."… … … … ….H.G.Walton (1911)

This was our Doon Valley a century ago. Bounded by the Himalayas in the North, the Shiwaliks in the South, the Ganga in the East and the Yamuna in the West, it formed one of the most splendid natural preserves in the world. The Doon Valley is approximately 20 Km wide and 70 Km in length and has an area of about 2250 sq km. The expanse of the valley and the ridgelines of two major watersheds (Ganga and Yamnuna) passing through it, make it a unique ecosystem which can support a wide variety of plants and animals. This valley has its legends too. An edict of King Ashoka at Kalsi records the existence of the valley during the 3rd century BC. The famous Chinese traveller Hwen Ts'ang visited this place in 635 AD. Babar too had mentioned in the *Babar Nama* that "***the finest running water in Hindustan is that in the Dun***".

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The city of Dehradun lies in the heart of Doon Valley. This city has an ancient history as old as Dwapar era. Dronashram or Dehradun is the dwelling of Guru Dronacharya – the spiritual and martial teacher of the *Pandavas* and *Kauravas*. The Darbar Sahib of Guru Ram Rai was built in 1707 which is supposed to be the first settlement in this city. Till the early 1900, this town resembled a garden town and the life in Dehradun was a dream-like locale, with each house situated in atleast one to five acres of land and the garden dotted with litchi and mango trees. Its natural beauty and bounty attracted a large number of retired people who got *re-tyred* enjoying the last span of their lives in this serene and quiet hamlet. Even till 1940s travelling in a *tonga* through the roads in Dalanwala with greenery all over the place used to be a breath taking experience. It had snowed in Dehradun in 1945 (*A Town Called Dehra* – Ruskin Bond). But this garden town of Dehradun has travelled a long way or rather a wrong way since its birth on this earth.

The scarred present

Today, Dehradun is a long straggling collection of buildings from north to south. Fresh houses and shopping complexes are constantly being built. The city is bursting with people and vehicles all over. Although it is one of India's wettest places with an average of 2200 mm rainfall annually, water shortages especially in summers is a common phenomenon. The water levels in most parts of the city have declined considerably over the last decade. Drinking water quality also raises a serious concern today with bacterial contamination in the water supplied to the inner city areas. Water logging occurs every year in the city during monsoon. Earlier the average temperature

even during peak summers used to be around 35^{O} C. Now it crosses 42^{O} C. Regarded as a *no fan city* earlier, now we cannot do without coolers and ACs in summers. The number of rainy days has reduced but the intensity of rain has increased causing flood like situation as it had happened during Uttarakhand flood disaster on June 16 2013. In the city of Dehradun, this was the wettest June day in the last five decades. (Anil K Gupta: Floods and Landslides: *Lessons of Ecology Not Yet Learnt)*

By late 1990s, Dehradun was known to have the highest per capita ownership of two-wheelers in the country. The number of vehicles has obviously gone up now emitting noxious gases and fine particulate matter causing smog and serious health concerns like in Delhi or may be even worse than Delhi because of the Valley Inversion Effect which reduces the dispersion of air pollutants.

I wonder where the green grass went?
All buried under the new cement.
I wonder where the birds have flown?
They have gone to find another home.
What grows so fast before my eyes?
A garbage dump, a million flies.
Is this the place you celebrate?
*Dirge for Dehradun……*Ruskin Bond, 2006

Tea plantation was the first economic activity started by the British in 1840. By 1886 there were 33 tea gardens covering an area of 4972 acres. The biggest tea estate Arcadia was spread over 600 acres and the produce from here could well compete for top market share with its counterparts from Assam and Darjeeling. Unfortunately, today there are only five tea gardens left in Dehradun and even these are under threat due to the Smart City Plan. A number of orchards too have been converted to agricultural and urban land. Gone are the days when Vijay Park used to be a guava orchard and Vasant Vihar a tea garden.

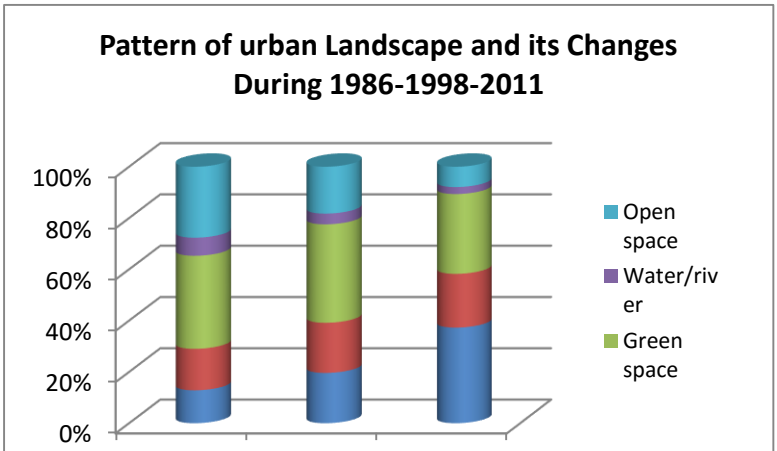
A total of 62.6 million litres per day (mld) of wastewater is generated from the city of which only 32.1 mld is collected and discharged into the rivers. The rest of the sewage flows through open drains. There is no Sewage Treatment Plant (STP) in the city. The drainage of the city is borne by the rivers namely Bindal and Rispana Rao. The city generates about 200 MT of municipal solid waste per day but there is no proper disposal or management of this waste.

What went wrong?

What has transformed the one time peaceful pensioners' paradise essentially, a "city of grey hair and green hedges" into a busy and polluted urban centre? What has strained the natural resource base to its limit?

Dehradun is often referred to as being the gateway to Garhwal. It is well connected by rail and road network to all parts of the country. The problem started after it became the capital of the newly formed state of Uttarakhand in the year 2000. As per the City Development Plan Dehradun, 2007, the decadal growth rate of Dehradun jumped up from 25% in 1991-2001 to 32.48% in 2001-2011 which was considerably higher than the national average of 21.53 percent.

This has put a lot of pressure on the carrying capacity of this city. The open and green areas are rapidly being converted into cemented areas. The extent of built-up has increased with the compactness in the centre city. This is contributing significantly to environmental degradation and transforming it into an urban heat island.



Data Source: Sadhana et.al. Tracing the Changes in the Pattern of Urban Landscape of Dehradun Ove Last Two Decades Using Remote Sensing and GIS, 2013

"These canals insignificant though they appear at first, are the greatest blessing to this district. In fact the people depend almost entirely on them for drinking and domestic purpose and for the cultivation of all the more valuable crops."……Baker (1886)

Earlier spring and canal water was used by the people for domestic and irrigation purposes. Groundwater was not much used**.** Now most of the canals have been either cemented or turned into receptacles for domestic waste and groundwater is playing a pivotal role in the city's water supply. Eighty percent of the drinking water supply in the city is being done by extracting groundwater. The groundwater used to be available in Dehradun at a depth of 20 m to 150 m but according to a recent report it has dipped by 8 m and the groundwater pressure has reduced by 50%. According to CGWB Uttarakhand's Groundwater Brochure 2011, the total stress for all kind of water needs at present is on the deeper aquifer. But surprisingly, Uttarakhand still lacks a Groundwater Department. The Doon Valley is geologically characterized by Doon Gravels. These comprise of unconsolidated gravels, pebbles and boulders which are very porous and permeable allowing water to seep through. These act like a subsurface sponge draining water away from the surface and the vegetative cover on it helps in absorbing and slowly allowing moisture to be released into the soil. But construction of roads, increase in paved areas, cemented areas in the form of houses, shopping complexes and encroachment in the river beds over the years has lead to increased run off and reduced natural recharge of the aquifers. The shrunken ground water reserve at Sahastradhara and the vanished aromatic *basmati* fields at Majra are the proof of this.

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Inspite of Dehradun being declared as an "Ecologically Sensitive Zone" 30 years ago, we couldn't safeguard its fragility. First, the city's master plan took years to come in place, then NEERI prepared carrying capacity based development plan for this city, followed by solar city plan by MNRE, the drainage plan prepared by the Uttarakhand Pey Jal Nigam in 2009, the 30 km long riverfront development project by MDDA for which Rs 125 crore

have been recently sanctioned, then around 239 crores sanctioned under JNNURM for the up gradation and improvement of city infrastructure and now the icing on the cake is the so called "SMART CITY PLAN" by UHUDA. The Smart City Plan would devour 2,000 acres of the lush green tea garden area, as per the initial plan requirement. There seems to be no end to our expectations from this city through our ambitious plans which never seem to get entirely implemented and neither are they well planned to start with. As a whole the city has grown haphazardly with little consideration of the functioning of urban systems.

What is a smart city?

The 100 smart cities mission of government of India intends to promote adoption of smart solutions for efficient use of available assets, resources and infrastructure. A city equipped with basic infrastructure to give a decent quality of life, a clean and sustainable environment through application of some smart solutions. In order to achieve these goals, the chosen cities will get Central fund of Rs 100 crore each year for 5 years. Dehradun is the only city from Uttarakhand which has been included in the list of 100. As per the smart city guidelines of the Ministry of Urban Development, the Himalayan states like Dehradun need only 50-250 acres of land then what is the need for 2000 acres of land, which was the requirement as per the initial plan? The government has however changed its plan for the time being to acquire 2,000 acre and is now acquiring 350 acres.

We all know that at the recent UNFCCC Paris Summit, India has been asked to control its GHG emissions although when compared to US and China, its per-capita emissions are insignificant. This is because India's GHG emissions are expected to rise substantially in the next few years as our government is investing heavily in the infrastructure sector which has a substantial carbon footprint. Our leaders have assured at the summit that they would be proposing real changes needed to ensure that our country has balanced growth and balanced environment but unfortunately in Dehradun we are planning to increase the carbon footprint and contribute to global warming by mercilessly chopping off the green cover in the name of development and smart city.

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Making a smart city by taking away thousands of acres of green land will not only disturb the ecological balance of Dehradun city but of the entire state of Uttarakhand. No minister or bureaucrat will be able to recover the immense damage done to the environment by their unthoughtful decisions. Development is essential to meet the demands of the growing population and changes with development are inevitable but drastic ecological changes in an area have long term bad effects.

Being informed and educated, the Doonites keep expressing their opinions and concerns. Incidentally, Doon Valley's anti limestone quarrying case in 1987 was the first public interest

environmental case in the country to be heard by the Supreme Court of India. No doubt many activists and organizations are actively involved in such activities to conserve the environment but the question is, "Why do we always need to convince the government?" When these issues can be felt and understood by the common people then why not by the bureaucrats?

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What is the future of this city?

This city will further lose its pristine beauty. Its population will rise further leading to more congestion, noise on the roads and smoke in the air which will affect the health of the people like our brethren in Delhi. The dwindling ground water resources in the city will become a big concern and the Smart City project will further complicate the situation. The rampant construction activities in the city will lead to blocking of recharge areas and more runoff of rainwater resulting in flood like situation. Overuse of groundwater will develop a negative pressure underground which will suck in pollutants from the surface and contaminate the aquifers.

The temperature of the city will further rise due to the heat generated from urban expansion. Loss of green cover will reduce the rate of evapo-transpiration leading to less number of rainy days and more carbon dioxide in the air.

What should be done?

This clearly indicates only one thing- this city needs proper planning and full implementation as per schedules for efficient use of available assets, resources and infrastructure. It would make more sense to develop Dehradun as a disaster-proof city. Conserving the abundant downpour during the monsoon through green spaces and water harvesting, needs to be taken up seriously. Construction activities should be avoided in the recharge area. Green patches in a city not only help in recharging groundwater but also trap the air pollutants and maintain the local temperature. Ecotourism should be promoted. This city urgently needs a design that will transform it into a model city perhaps like Curitiba (Brazil) which is one of the best sustainably developed urban cities in the world. Let's all strive to make our city better.

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