Opportunities and Perspectives of Monitoring environment at Dehradun, Uttarakhand (India)

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Abstract
Environment is the sum of all external conditions affecting the life, development and survival of an organism. Environmental Assessment (EA) is an independent assessment of the current status of a party's compliance with applicable environmental requirements or of a party's environmental compliance policies, practices and controls. Environmental impact statement (EIS) is a document required of federal agencies by the National Policy Act for major projects or legislative proposals significantly affecting the environment. A tool for decision making, EIA describes the positive and negative effects of the undertaking and cities alternative action. As per section 3(v) of the Environmental Protection Act (EPA) and rule 5 sub-rule 5 (viii) and (x) of the Environmental Protection Rule, Centre has the power to take all such measures as it deems necessary or expedient for the purpose of protecting and improving the quality of the environment and preventing, controlling and abating environmental pollution. The June 2013 tragedy that affected the Char Dham area of Uttarakhand where thousands of people were killed and there was massive damage to property, forced a rethinking that Uttarakhand could be studied to promote Eco-Tourism (ET).

Keywords: Environmental Assessment (EA), Environmental Impact Statement (EIS), Environmental Protection Act (EPA), Eco-Tourism (ET).

Introduction
Uttarakhand, formerly known as Uttaranchal, variously called the ‘Land of Celestial Beauty’, ‘Dev Bhoomi’ or the abode of the Gods and ‘Paradise for nature lovers’. It became the 27th state of the Indian Union on the 9th of November 2000. The charming hilly state carved out of Uttar Pradesh, compries of two regions- Garhwal in the west and Kumaon in the east. Two of India’s largest and holiest rivers, the Ganga and the Yamuna originate from the glaciers of Uttarakhand [1, 2].

Dehradun is located about 270 km north of the Indian Capital New Delhi. Dehradun lies between 29°58’ N and 31°2’30” north latitudes and 77°34’45” and 78°18’30” east longitudes. Doon valley extends for a length of about 80km with its average width of 20 km occupying an area of about 2245 km². It is located between the rivers Yamuna and Ganga in the north western limit of state Uttar Pradesh and adjoining the state of Himachal Pradesh. Dehradun is bounded by the Himalayas in the North and the Shiwalik ranges in the Southern part. It has a temperate and humid climate. Winter season is confined mainly from mid-November to February, while summer continues upto the end of June and monsoon from July to September. Temperature ranges between 1 and 20 °C in winters and 35°C-44 °C in summers. It is referred as “The Rainy City” of India due to continuous and incessant rainfall. The average annual rainfall in the valley is about 2073 mm. The year 2013 has the longest monsoon with highest ever recorded rainfall of 370 mm on 16th and 17th June 2013, leading to Kedarnath disaster. Relative humidity is high during the monsoon season; it exceeds 70% on an average. During summer season, the relative humidity becomes even less than 45%, retrieved from meteorological department [3-5].

Methodology
Monitoring environment could prove helpful in developing opportunities and perspective in eco-tourism at Dehradun:
1. Bird Tourism
2. Wildlife Tourism
3. Religious Tourism
4. Spiritual Tourism
5. Adventure Tourism
6. Rural Tourism
Future Perspectives: Tree Houses at bird watching sites could be introduced. New walking trails, signage, watchtowers, viewing points and interpretation centers could be developed.

Wildlife Tourism
Sites- Division/Circle – Corbett Tiger Reserve, Shiwalik Circle, Bhagirathi Circle, West Circle, Rajaji National Park, North Circle. Sanctuaries – Govind Wildlife Sanctuary, Binsar Wildlife Sanctuary, Nanda Devi Forest Division, Kedarnath Forest Division, Bagheswar Forest Division, Askot Landscape in Pithoragarh Forest Division, Asan Barage, Chilla.

CTR has the highest tiger density in the world followed by RNP. Asian Elephants has seen a rise from 1559 in 2012 to 1797 in 2015 in Uttarakhnad. Major attractions at present are pangolin, snow leopard, tiger, asian-elephant, musk-deer, rhesus macaque, wild- boar, asiatic black beer, goral, thar, monal, a pair of red pandas and a pair of markhors (National animal of Pakistan-endangered spp. of goat family) introduced in Nainital’s Pt. G.B. Pant High Altitude Zoo from Padamja Naidu Himalayan Zoological Park in Darjeeling. Elephant Safari (4 elephants introduced at RNP) has been introduced as it is advantageous-as adventurous rides, animals do not shy away as gypsies are noisy, good overview and easy patrolling in monsoon. Strict anti-poaching measures taken are- Intensive patrolling by use of GPS devices / Forest Satellite; Aerial Surveillance; Sniffer dogs; Collaboration with army, ITBB, SSB and Wildlife Crime Control Bureau to bust the network of poachers [6-8].

Future Perspectives: Guided trips in improved safari vehicles. A Zoological park could be established to rear endangered spp., national animals of different countries and exotic animal Diaspora of different lands.

Religious tourism
Dehradun, Rishikesh and Hardiwar declared as heritage sites with Hardiwar having 370 heritage sites and Rishikesh 30 heritage sites. A budget of 30 crore for Tehri lake, 40 crore for Char Dham and 50 crore for Kedarnath has been declared. 13,000 crore budget is allocated to build 890 km national highway joining the Char Dham. After 2013 Kedar valley tragedy, present focus is on Char Dham Yatra. State Govt. allowed only 1500 devotees for darshan daily. All devotees were registered. 282 doctors deployed to cater to yatris on the pilgrimage marg out of which 18 were specialist doctors. A team of 230 SDRF (State Disaster Response Force) personnel deployed on all 4 routes of yatra-marg. KMVN will offer food, lodging, drinking facilities to yatris. The Rudraprayag district administration is offering lodging and meals to Kedarnath devotees at a nominal price of Rs.100 daily. Nehru Institute for Mountaineering (NIM), PWD, State Disaster Management Department, Border Road Organization and State Electricity Department has been working round the clock to rebuild 12 trekking paths, 4 bridges and cleared the snow from the path to create a passage along the Rambara- Limcholi - Kedarnath route. 60 fiber tents and 15 pre-fabricated cottages have been set up at Kedarpuri for pilgrims night stay. Additional 40 tents and 85 cottages are being installed at Kedarpuri, Rambara and Limcholi. 100 road side shops with essentials for pilgrims along the route and 100 rain sheds have been built on the Rambara- Limcholi- Kedarnath stretch [6-8].

Future perspective: Instead of proposed Rs. 120 crore ropeways for Char Dham skywalk could be introduced. UTC should introduce luxury coaches with trained drivers to conduct guided trips for Char Dham pilgrims along with fooding, lodging and medical facilities, all under state authorities strict vigilance. The Char Dham could be connected through Chopper Service only after clearance from Wild Life Department.

Spiritual Tourism
Sites-Haridwar, Dehradun and Rishikesh. Rishikesh is the Yoga Capital of the World and June 21 is recently being announced as World Yoga Day. In 2014 around 50,000 foreigners visited Rishikesh for ashramming, cramming, yoga lessons and search for inner peace. Swami Chidanand Saraswati Ji and Sadhvi Bhagwati Saraswati are the driving force of Parmarth Niketan at Rishikesh, one of the biggest ashrams with 1000 rooms, organizing yoga programmes throughout the year. The State Culture Department has given green signal for 12 crore Himalayan Museum in Rishikesh which will have replicas of Char Dham temples, will have 5 galleries dedicated to zoology, arts, heritage and over 3,500 artifacts under one roof. Two more museums will be established in Almora and Pithoragarh. They will provide with a glimpse of the important destinations, handicrafts, attire and culture of the region in the galleries. The heritage gallery will have replicas of the sites of archaeological and historical significance such as Banasaur Ka Kila in Dwarhat of Pithoragarh or Pathani temple of Pauri. The ethnographic gallery will have traditional artifacts and attires of various communities [6-8].

Future Perspective: Rikshaw buses to be introduced conducting guided hop-on-hop-off trips through; Orange Route - Haridwar City Trip; Royale Blue Route - Dehradun City Trip; Sky Blue Route - Rishikesh City Trip.

Adventure Tourism
For adventure and excitement, Uttarakhand offers adventure sports at various sites.
- Water Sports like Rafting, Boating and Angling at Rishikesh, Tehri Lake.
- Aero sports like Hand Gliding, Paragliding at Pithoragarh, Jolly Grant, Pauri.
Trekking, Skiing at Auli, Dayara Bugyal, Munsiyari, Mundali, Auli, Dhanaulti, Bheemtal \[6-8\].

**Future Perspectives:** Cable Car connectivity from Dehradun to Mussoorie. Dehradun- Parade ground to be ordained with a landscaped Botanical Garden and Observation Wheel. Mussoorie-The Peak Tram could be introduced covering areas like Mall road, Gun hill, Camel’s top, Kempty falls, Landours as four wheelers cause traffic congestion. Gun Hill could be developed as Terrace 360. Haridwar- Har ki Pauri requires beautiful landscaping. The three cities basic infrastructure, traffic movement, open drainage system, needs a drastic change and makeover.

**Rural Tourism**
The Asian Development Bank is sponsoring Rural Tourism in about 20 villages in Uttarakhand, some of which are Chakrata, Munsiyari, Naplachun, Kuti, Garbyang, Nabi, Rong Kong, Gunji. Centuries old villages cut off from the mainstream, nestled in the mountainous terrain of Uttarakhand will get a new lease of life to encourage rural tourism. Culture Department has selected 48 houses in 6 villages of Darchula tehsil of Pithoragarh district to be developed as home stays, souvenir shops or heritage hotels. Rural Tourism will help to halt migration, provide livelihood to local residents by developing traditional houses as home stays giving tourists gain an insight into tribal life, villagers will be trained in hospitality, display of skills like knitting, handicrafts, cane decorations.

**Future Perspective:** Can expose the rustic rural homes to an alien culture with some negative values and should be given a retrospect.

**Discussion**
MDDA had already submitted the plan to Centre for Doon (U.K.) to be developed as one of the smart city while Dharamshala (H.P) could be developed as a site for International activities/meets and a beautiful Zoological Park could be developed to rear exotic national and international animals. The existing old could be maintained and new could be introduced with a strict check so that nature is not disturbed. Great need to market Tourism at international level to attract international tourist as a source of revenue with a slogan- “Visit India for a Nature Walk”. The rich cultural traditions and cool and invigorating climate of Uttarakhand seems up for a perfect holiday destination to relax and unwind.

**Conclusion**
Keeping in mind the fragile equilibrium between man, nature and technology, the beauty of Doon Valley could be enhanced by seasoning it with technology in a balanced way so that we can enjoy both-nature in its wild form and technology.
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