

Uttarakhand 2020- Economic Development through Principles of Management and Personal Experience

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ABSTRACT

The purpose of this paper is to take note of the resources (human as well as material) of Uttarakhand, identify the opportunities of economic growth that utilize the capabilities of the people of Uttarakhand and its resources optimally. The analysis will be based on the principles of management, namely: 1. Plan. 2. Design and 3. Evaluate 4. Execute and Amend. In this process, we hope to summon all paraphernalia of management such as accounting and finance, human resource management, administrative theory, marketing and supply chain management.

Keywords : Economic development, Management Concepts and Principles, Leadership, Strategy.

1. Geography, History and the Cultural History of Uttarakhand

There is a motto that explains the thinking behind the United Nations Aid programs to poor countries. "Give a man a fish; he'll eat for a day, teach a man to fish; he'll eat for a lifetime". Of course, Uttarakhand is all hills but the quotation serves its purpose to convey the sense of pride in earning one's own upkeep rather than waiting in line for government handouts. To understand the collective thinking of a State, which one may define as culture, it is important to know all three aspects that guide the human behavior of a populace: geography, history, and culture,

Dehradun is a valley spread between the Himalayas (one can see Mussourie and Narendra Nagar hills to the north and the Shivalik ranges to the south). Which of these hill ranges are older? The question carried enough intrigue. Himalaya seemed a plausible answer as it looked imposing and unending. The actual answer was the low lying Shivalik ranges that one crosses on one's way to entering Dehradun from south. The ancient geography and the plate tectonics theory of continental drift, dating back at least seven million years, does reveal that a large portion of land mass ejected out of southern tip of Africa and moved north-east wards to join the southern part of Asia. It created the fault line that passes through Dehradun, westwards towards Kashmir and eastwards towards Southern Nepal etc. This alone would call for significant disaster management body for the State of Uttarakhand. The fact that the Wadia Institute of Himalayan Geology is in Dehradun should give some solace. The recent disaster in Uttarakhand of October 2013, was not caused by earthquake, it was an environmental disaster that consumed twenty thousand lives.

People of Uttarakhand are simple, hardworking, God fearing and honest to the core. Ninety percent of Uttarakhand is hilly area. The population of 1.1 crore is

90% Hindus and the rest consists of Muslims, Christians, Buddhists, Jains and others and the racial harmony in Uttarakhand is exemplary. The largest city in the State is Dehradun, the capital city, with a population of 578,000. The presence of holy pilgrimages known as Char Dham (four divine residences) is a big source of tourism and income. Lord Shiva and Parvati (daughter of Himalayas in a spiritual interpretation) are the common deities and they are the sources of all cultural and devotional festivals, as the presiding deities.

Unfortunately, the Indians have been lax in recording their history. Our history has to be authenticated with a recorded proof and witnesses. The western historians recognize the history of India only since 325 B.C. That was when they were following and recording the forays of Alexander the great, and Puru, the king of Punjab, took to halt him at the Chenab River. It is not that Hindus couldn't count. In fact, the decimal number system is the gift of Hindu mathematics to the world. The problem is the Indians recognize the infinite time cycle via Kanad's philosophy, (Bhatt et.al. 2012), and could not settle to a reference point to begin the time count. For example, say, the December 30th of year 2013, the day this page is being written, would be counted on Hindu calendar as : on this first day of Brahma, the second section (prahara) of Sweta Varaha kalpa, in the Manvantar of Vaivashwata Manu and its twenty eighth Kaliyuga's first step's (charana) 5064th year's December 30th. Obviously, the reference point here is the beginning of Kali Yuga on the day of leaving the earth by Lord Krishna. They do have other reference points of times such as Vikramaditya, and Shaka calendars.

Uttarakhand was well recognized in the early Pauranic period. The author was pleasantly surprised to find Padma Puran in the library of University of Manitoba, Canada. It had the so called Kedar Khand and the Manas Khand indicating to the Garhwal region and the Kumayun region. Other than Kolas, Arians and Dravidian mixes, there were Nagas, Khas, Huna, and Kiratas, the ancestors of modern

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day Bhotias. The author has had a chance meeting with late Shree Vidya Sagar Nautiyal, a freedom fighter and a renowned litterateur in which he enumerated more than a dozen dialects spoken in Uttarakhand aside from Garhwali, Kumaoni, Gorkhali, Jaunsari, etc.

2. Uttarakhand's Knowledge Centered Culture

Western scholars have dated the creation of Vedas as 6000 to 8000 B.C. Historians would call it a prehistoric period as recorded documents were not available. This is the reason that the Vedas, the Rig, Yajur, Sama, and Atharva were called the Shruties, as they were preserved and passed on to the generations down by memorizing and relaying. The Vedas were not authored by any one person, but is more of a compilation accredited to rishi Vedavyasa. Here in Uttarakhand, the first words of knowledge were conceived, read and rendered to the world:

Om! Agnimeele Purohitam, Yagyasya Devam Ritvijam, Hottaram Ratnadhatamam

This is the first richa (couplet) of Rig-Veda with obeisance to Fire God. Though every richa (couplet) does mention a rishi, the Vedas are generally regarded as the revealed knowledge realized by the rishis in their deep meditational (Samadhi) state. The rishies and sages further wrote or narrated commentaries that were known as Brahmins. Then, the knowledge created through students and teacher dialogue were known as Aranyakas and Upanishads as the students (disciples) were encouraged to create knowledge by the principle of "Vaade Vaade Jaayate Tatva Bodhah"- Through intellectual discussions only, the essence of truth will be revealed, and "Aano Bhadra Ritavo Yantu Vishwah"- Let the noble thoughts come from all directions. The thinking process was not dogmatic but liberal and all encompassing. "Ekam Sat Viprah Bahudha Vadanti". These rishies and their disciples were said to be residing in various parts of Uttarakhand. These natives and residents of Uttarakhand could be identified by the original pahari people that came from the stocks of people original to the Himalayan ranges, Tibet, Nepal, Garhwal and Kumaon, having mongoloid features with high cheek bones and golden yellow skin color. Mixed with them would be the ones from Arian-Dravidian stock with European features and darker skin color that migrated from southern plains.

There are signs of the times of Ramayana in Uttarakhand as well. At Devprayaga, after the killing of the Lanka king Ravana, Lord Rama is ordered by guru Vashishta to do a rigorous tapa as a penance for killing of a Brahmin. Shree Rama came to Uttarakhand at Devprayaga and performed the requisite penance. The Indian historians do not give much credence to the history of Ramayana, such as not accepting Setubandh Rameshwaram as a man made structure, instead, calling it a natural structure, even going

against the NASA findings. The sign of Dronagiri Mountain that was lifted by Hanuman ji is in Chamoli district where a deep round impression of valley indicates as if a mountain has been carved out of there. Uttarakhand has also been an active witness of history of ancient India. King Ashoka of Maurya dynasty had the habit of erecting his edicts to spread Buddhism. His messengers reached Kalsi near Dehradun. Some even went to Badrinath holy temple and threw the idol of Shree Vishnu into the nearby Narada Kund. This was the period of 304-232 B.C.

3. The Strategy and Decision Making

There are two schools of thought on decision making process: a rational decision theory of Herbert Simon and an irrational (behavioral) decision making theory of Daniel Kahneman. Amazingly, both the economists were rewarded with Nobel prizes in Economics, in 1978 and in 2002 respectively.

The renowned strategy expert, Henry Mintzberg (1988), in his book begins with the old Indian story of six blind men and the elephant to illustrate the intricacy of understanding and defining the problem at hand in any organization, and developing the strategy. The author does recall a fruitful meeting during Professor Mintzberg's visit to Asper School. Mintzberg lists ten schools of strategy formulations. Just as in consumer choice theory of marketing, the decision making process of a consumer to select a product or a brand, goes through the consumer's cognitive psychology and attitude (Bhatt et.al. 2012 and Smimou et.al. 2005). This helps business managers develop strategies for the product sale and product design. Cognition is observation and information processing. Many cognitive psychologists have even gone to the extent that cognition is observation, information processing, evaluation and decision making. After cognition of a product, attitude is the second factor in the process of decision making and choice preference. Attitude is composed of two elements- beliefs and values (Hughes, 1971). Belief is a state of knowledge of a person as to whether something exists and with what surety. Awareness and unawareness represent two extents of belief. Strategy in a broad sense has come to mean as a top manager's plan to attain outcomes consistent with the organization's mission and goals.

The blind men and the elephant story do point to the fact that in order to design strategy, the problem must be well defined with clear mission and goals. Otherwise one may end up designing the best strategies for a wrong problem. Now we are all set to state the mission and the vision statements and the stock holders and the stake holders in a typical organizational management setting.

Mission Statement: Organize the state of Uttarakhand that creates best job opportunity for everyone that provides the basic needs of food, clothing and shelter, and plenty of

opportunities for education, health, safety, security and growth. Also, promote good ethics and high moral values to bring pride among its residents.

Vision Statement: Make Uttarakhand the richest state and its residents the proudest people in India.

Normally, the mission statement is what you want to do and the vision statement is what you want to achieve ultimately. Stating the mission and the vision statements is a pretty tedious task. Selection of the words, their etymology will always summon debates. Once the mission statement is agreeable, one has to clarify as to who has the stake in the success and growth of this state. That is describing the stock holders and the stake holders.

The stock holders: The government of Uttarakhand of the time.

The stake holders: The opposition parties, the people of Uttarakhand and the people of India.

The stock holders are primarily responsible for the management of the company and the management tends to look after their interests. The government of the day carries the biggest stake and vigil as a poor performance may cost them the next election. On the other hand, the opposition parties have to be alert to make sure that the management does not deviate from the stated mission.

The primary job of a state government such as Uttarakhand, is to keep law and order through policing and courts, generate revenues through taxes- income or sales, and tolls, excises or issuing licenses etc.; provide the basic health care, education and safety to its citizens and finally, create an atmosphere conducive for the business and industry to flourish so that jobs are created. For external security, the central government is responsible. The role of the management is to develop strategy that will achieve the stated mission. The manager or the leader of the organization, Uttarakhand, can be the Chief Minister or the whole cabinet, if collective leadership is the style of the government. It is well known that management is about leadership. So, we will now look at what the management literature says about it.

4. The Leadership

Charisma was thought to be a common trait associated with leadership. Unfortunately, there have been ample examples that a lack in ethical values could reverse the leadership impact. Hitler, Benny Ebbers, CEO of Worldcom, and Jeffery Skilling of Enron came to be known for their notorious leadership. The author remembers the messages he used to receive, as the chairman of the MBA program committee from AACSB (American Association of Colleges and Schools of Business, an accreditation granting agency), to introduce more ethics content in the

program. This was after the advent of WorldCom and Enron. Over the years, the five common leadership traits (Dyck and Neubert, 2010) came to be known, are the following: (i) The desire to lead, (ii) Drive, (iii) Self Confidence, (iv) Honesty and Integrity and (v) Intelligence and job-relevant knowledge. Every leader would have these characteristics in varying amounts. India has given great leaders. In her history with the clear cut mission of independence, an array of leaders can be mentioned: Mahatma Gandhi, Nehru, Lal Bahadur Shastri, Bhagat Singh, Bose, Vivekanand etc. When it comes to leadership, Indians do not have to look westwards; Indian literature describes the duties of a leader as in Kautilya's Arthashastra, Vidur neeti etc. The well known leadership expert Professor Hawley (1993) of Harvard University in his book- Dharmik management, bases his discussion on leadership on a story in Mahabharata. In the section "Bhishma Parva" of Mahabharata, the Kuru scion, Bhishma is lying on the bed of arrows, as he could delay his death till the northern phase of Sun, and Arjuna asks him about the duties of a leader. What is said on "raj dharma" leaves the reader in disbelief that such lessons were conjured up some five thousand years ago.

On the whole, the success of the leadership is in fulfilling the objective of the stated mission. Courage and motivation are two characteristics that would be common in every great leader. How a leader motivates his/her followers or workers is a subject of psychology but most recently the case of Paul O'Neill has garnered attention in leadership literature. Paul O'Neill (cnn/Fareed Zakaria GPS/tough decisions/Paul O'Neill) was appointed the CEO of the Pittsburg based aluminum giant ALCOA. Whispers were abounding in the company as O'Neill did not come from aluminum background. In his first board meeting, O'Neill found that the national standard for ratio of injuries to workers was 5%. Though ALCOA was doing much better than national standard, he commanded a 0% rate of accidents and injuries. Every expert in the company was flabbergasted, saying that it is next to impossible. O'Neill stuck to his order. The company's market value rose from \$3 billion in 1988 to 27.53 billion in 1999 while the net income increased from \$200 million to 1.484 billion during this period. In human resource management literature, it is termed as a release of "discretionary energy" by the workers. When the workers realize that the administration is caring for them, they work with enthusiasm and vigor that reflects their gratitude.

The traits of leadership will vary as the underlying field and the mission changes. We shall enlist some of the areas where the leadership characteristics are focused as the mission demands.

- a. **Social Leadership:** Raja Ram Mohan Roy (Brahmo Sabha), Swami Daya Nand (Arya Samaj), Swami Viveka Nand (Rama Krishna Mission), Devendra Nath

Tagore (Brahmo Samaj) and Mahatma Gandhi can form a formidable group of social leadership. Their common trait was a compassionate and a selfless service to the society. Mahatma Gandhi had to indulge in the social reform to fulfill his larger mission that was the liberation of India because a fragmented and a segregated society could not stand up to an oppressor.

- b. Spiritual Leadership:** It is natural for Uttarakhand to produce great spiritual leaders. Asceticism, renunciation, spiritual practices and social service are common traits. The place for a guru in the Indian society reigns supreme. The author is fortunate to host Mahamandaleswar Shree Vedvyasanand Saraswati ji when the author was the president of the Hindu Society of Manitoba in Winnipeg. The author is privileged to know Shree Muni ji of Parmarth Niketan at Rushikesh and Swami Pragya Nand of Shanti Kunj, Haridwar. Another outstanding personality in the field of spirituality and with a large following in the world is Shree Satpal ji Maharaj. On a personal note, Shree Mahamandaleswar ji expressed his sadness about buffalo sacrifices in village fares as a part of Kali puja. Guru ji did leave a great question to ponder. Ironically, the solution does lie with spiritual leaders like him. Uttarakhand boasts of two of the most well-known spiritual cities- Rishikesh and Haridwar. Hordes of devotees throng temples bring riches to gurus, ashrams and what not. Unfortunately, the villages up above the hills in Garhwal and Kumaon are sulking due to lack of work and proper motivation. The villagers are trapped into alcohol, smoking and chewing of tobacco and panmasala, the carcinogenic matter that causes cancer. The government can play a big role in developing a strategy to exhort the gurus and swamis in these temples and recognize them to perform social and spiritual services to villages and encourage people to rid these habits injurious to health.
- c. Political Leadership:** A political leader is a great communicator, understands his people's needs, culture and aspirations. He has the courage of his moral conviction and works for the betterment of his people. Two most well known political leaders Uttarakhand has given to India are : Bharat Ratna Govind Ballabh Pant of Almora who was the first chief minister of Uttar Pradesh and a home minister in Nehru's cabinet, and Vichitra Narayan Sharma of Navada, Dehradun, another minister in Nehru's cabinet, who was a constant companion of Mahatma Gandhi during the freedom struggle. The Khadi movement and the Khadi Gramodhyog is said to be his brain child.
- d. Military Leadership:** One thing that Uttarakhand can feel proud would be in the field of military leadership. Disseminating information, tactical and strategic decision making, thinking on your feet, discipline and valor comes naturally to military leaders. The author reminisces an event in 1986, during an international conference of Indian Operations Research Society in New Delhi, when the author was introduced to General G.S. Rawat (retired), who at that time was the Director of an MBA school in Noida. The general asked, "Where are you from Doctor?", "I am from Garhwal, Sir!" was the reply. He shook hand and said, "I am also a pahari and I am very proud to see you here". Later, the author would come to know that General Rawat was the second-in-command of the Indian army under Field Marshal Manekshaw. This honor will be further topped by another Uttarakhandi, when General P. C. Joshi became the Indian army chief in 1993.
- e. Technical Leadership:** Every corporation and business would need technical expertise such as accountants, investment experts, and actuaries to account for risks, and disaster management, and lawyers specializing in corporate law. No organization wants to repeat the fates of Enron and world dotcom. As health and education is accounting for larger and larger portion of national budgets (60% in Canada), universities are warming up to include health care specialization in their MBA programs.
- f. Entrepreneurial Leadership:** Many entrepreneurs claim that entrepreneurialship cannot be taught. It is in you. One is born with it. Obviously, the author had a queer feeling when he was invited to lecture in an entrepreneurial school known as SEEDS (Self Employment and Entrepreneurial and Development Society) in Vancouver, funded by the government of British Columbia, Canada. The author was further encouraged to meet a fellow Uttarakhandi, Sunil Rawat, instructing there. The school runs for 48 weeks. The first 10 weeks are devoted to classes that train them in preparing business plan, concepts of business, market research, demand supply data and break even analysis. The remaining 38 weeks are spent on business counseling. The B.C. government sets aside a fund of one billion dollars. The students (candidates) submit business projects and upon the approval of the application (projects), the funding is allotted with 25% liabilities and a prime +2% interest rate on loan. An IITian from IIT Kanpur, in 1967, N.R. Narayana Murthy of INFOSYS is the most well known entrepreneur of India.
- g. Business Leadership:** The whole business education is geared towards preparing business leaders. The

complexity is due to so many factors to comply with. The organizational structure, whether pyramid or flat, the mission, the state of economy, consumer choices, keeping abreast with research, motivating workers are everyday tasks. Paul O'Neil, discussed above is a great example of a business leader. As Steve Jobs said, "We cannot afford to make things that consumers want today. By the time we make it, they would have changed their minds"

5. Assets and Opportunities in Uttarakhand

5.1 Central Institutions

Before formal strategies are arrived at, it is important to have an evaluation of the assets and opportunities. After the mutiny of 1857, and the Victorian promulgation, all uncertainties were cleared and all of India was under a firm British rule (The author has visited Victoria Memorial umpteen times in Calcutta, now Kolkata). In 1905, the capital of British India moved to Delhi, which normally had a hot summer. The British did move their summer capital to Simla; however, Dehradun, Mussoorie and Nainital were their favorite summer escapes. Uttarakhand's cool terrain, the scenic views, added to their attractions. By 1939, the Second World War had started. Fighting forces were needed all over the globe and Japanese forces were nearing the Burma border. Author's father-in-law was in the British forces fighting the Japanese in Burma. When his troops got annihilated, he lay under the corpses for a week and escaped the enemy attack. He was declared missing or dead. Meanwhile, the Gorkha regiment, the Garhwal regiment and the Kumaon regiment were there to help in Dehradun, Lansdowne and Ranikhet respectively, and are an immense source of pride and employment. The ITBP training center at Dehradun is another huge investment of the national government. However, sensitive establishments such as, Survey of India, Ordnance factory and defense research establishments were moved from Calcutta to Dehradun for security considerations, during Second World War. Uttarakhand has enjoyed more than its share of central establishments and have opened up innumerable job opportunities for local residents, Oil and Natural Gas Commission, Indian Military Academy (IMA), Indian Institute of Petroleum, Forest Research Institute, Comptroller General of Accounts, IAS training center, Mussoorie, are well known. Bharat Heavy Electric Ltd., Haridwar is a cherry on cake.

5.2 Private Businesses

Uttarakhand has not attracted its share of big business houses. Tata motors, Tisco plant at Pantnagar making Nanos, and a Tata watch manufacture at Dehradun makes up a few that there is. In terms of small businesses, SIDKUL (State Industrial Development Corporation of Uttarakhand Limited) has very attractive terms that help

open up small businesses. They have helped develop many businesses and ancillary industries to support major industrial establishment such as BHEL etc. Uttarakhand's terrain is well suited for herbal research and related pharmaceutical development as demonstrated by Patanjali Yog Peeth in Haridwar and many new pharma companies in Silakui would attest as well.

5.3 The Agriculture Sector

Agriculture forms the main source of lively hood in the State. Rice, wheat, sugarcane, tea, kodo and jhungaro, and spices and herbs are grown in Uttarakhand. In the hills of Garhwal and Kumaon, the small farmers have hard time in sustaining their livelihood. Even though hill area food production is all organic, and the new environmentally conscientious scientists and agronomists call these farms under "conservative agriculture", these farmers are not enjoying the benefit of organic production as much. On the last visit of the author in his village, it was told that many ashrams are buying the cow urine at par with milk in the villages. Amazingly, the environmentally conscious world is now advocating "conservative farming", which is being practiced in the hill areas for ages. The FAO 2007 report explains the conservative farming as: "a concept of resource saving agricultural crop production that strives to achieve acceptable profits with concurrently conserving the environment." The conservative farming is based on three moot points: (i) less deep tilling. (ii) leave a layer of mulch after harvest and (iii) crop rotation. The author recalls asking his aunt in his childhood regarding the changing of crops to grow in the sectors alternatively. Little did the author know, he will be supervising a project on crop rotation for a M.Sc. student in the department of Agriculture at the University of Manitoba. In western countries, governments are proactive in looking for latest research in agriculture. When the author presented his paper (Bhatt, et. al. 1987) on his multi-objective farm planning model in a conference in Toronto, the author received a phone call within a week from the deputy minister of Agriculture Canada asking. "Dr, Bhatt! Why do you say the farm planning is a multi- objective problem?" Coming directly from a high government official was a pleasant surprise.

5.4 School Education

Uttarakhand is bestowed with some of the finest educational centers at the school to higher secondary levels in the country. The unmitigated love of Britishers towards Uttarakhand is reflected in their inception. Some well known schools with their alumni are: The Doon School (Rajiv Gandhi), Colonel Brown (Dabboo and Chintoo Kapoor), Welhem (Vrinda Karat), and Sherwood (Field Marshal Manekshaw and Amitabh Bachchan). There are two other distinguished schools that cater to the children of government employees: Oak Grove (Railways)

and General B, C. Joshi Army Public school (Army). Despite these great schools, a child born in a village of Garhwal and Kumaon cannot dream of being a participant. He or she is destined for the village primary schools. There is nothing wrong with that. There are dedicated teachers in these schools. The author himself will attest to that. The author had his city board primary school, class 1 taught on the verandah of Jugmandar hall, Dehradun sitting on the floor over a jute strip. The medium was Hindi. Hindi is the connecting language of Uttarakhand and the national language of India and is fourth most spoken language of the world with 49 crore speakers. Somehow, the way the world is progressing, Hindi has not kept step with it. English is the language of science, of international business and that of laptops and cell phones and international communication. The author is very proud of his mother tongue Hindi. He, in 1982 was editing the news-letters for Winnipeg chapter of Vishva Hindi Parishad. He was in the government of Manitoba's heritage language forum, which formulated the State language policy of school credits. It was approved that if in any school, there are at least five students to opt Hindi as a subject, they will be provided with the tutor, examiner and grader. Author's all four children have Hindi as a subject in their grades tenth, eleventh and twelfth while studying in Canada. It is not just the case with India; proud countries such as China, South Korea and Japan are facing the same problem. In the early eighties, these countries invited North American students to take summer jobs to teach English to their students with pronunciation and diction. A child born in Uttarakhand hills is deprived to learn English at the early age and would suffer from a lack of confidence all his/her life. These young ones need laptops, ipads, ipods and so on. One can appreciate what chief minister of UP, Mr. Akhilesh Yadav is doing in this regard in UP. Therefore, in order to have State's children receive a head start and be competitive in the world, we propose the strategy:

Strategy: Introduce English as a compulsory subject in all primary schools of Uttarakhand.

5.5 College Education

Uttarakhand has a long tradition of college and university education. The two universities, HNB Garhwal University, Srinagar, Garhwal and Kumaon University at Sleepy Hollow, Nainital cover a large variety of faculties including business, law and medicine. IIT Roorkee is a nationally ranked university. There are medical colleges- Guru Ram Rai, Dehra Dun, Himalayan Institute, Jolly Grant, and a branch of AIMS to open near Rishikesh. There are engineering colleges catering to the interior hill areas at Ghurdauri, Garhwal and Dwarhat, Kumaon apart from the ones in the major cities.

All over the world, university education is taken very

seriously and there is a cut throat competition to lure best students with attractive fellowships and tough admission criteria. In the world, rankings of the universities powered by Thompson Reuters, among the top 400 universities, IIT's at Kharagpur, Bombay and Roorkee are the only universities finding a rank within top 400 universities of the world. Their rankings were 234, 258 and 367 respectively. No comprehensive university from India found a place in top 400. These agencies base their rankings based on tough criteria such as Ph.D. degrees of faculty, their research output, computer facilities, international component etc. It is inevitable that the masses of Uttarakhand living in the villages in the hills be armed with opportunity to compete for admissions to IIT's and medical colleges exactly as was done by the Chhattisgarh government recently.

Strategy: Invite Mr. Anand Kumar Singh and sign up an MOU to train village students in High School to prepare them for admissions to IIT's and medical colleges.

5.6 Business Education

The importance of business education cannot be undermined for the Uttarakhandees. The majority of Uttarakhand people live in villages. There are among them, only three casts: Brahmins, Kshatriyas and other casts but not Vaishyas. Therefore, culturally, they are not used to doing business. They are innately honest and simple people. To them hustle, persuasion and bargain sound foreign words. In USA, 75% of employment among people is credited to family businesses. In America, families look for doing things on their own and are not looking for a government job. That would be the last thing in their minds. Uttarakhand has produced great litterateurs such as Rahul Sankrityayan, Sumitra Nandan Pant and Pitamber Datt Barthwal but not great business tycoons. This can easily be overcome by providing them an opportunity to learn business. The author vividly recalls his visit to the Vice Chancellor Dr. Rajput in 1993, and the discussion centered on employment opportunities. My humble question to the brilliant VC was that after completing one's B.Com degree, does one learn enough to own a business for oneself? The honest answer was- blame the guess papers.

Strategy:

Open two entrepreneurial schools, one in Garhwal region such as in Ghurdauri and one in Kumaon region such as Dwarhat in Kumaon. A successful model already exists: The Entrepreneurial School at Ahmedabad. The great institution such as SIDKUL could play a helping role.

This has also been discussed under the entrepreneurial leadership. One may ask what would be the guaranty for such an endeavor. The proof is in the pudding. If a boy

born in a remote Garhwal village, was schooled through municipality schools, then went on to the IIT and ended up as a professor emeritus in a prominent business school in Canada, another village boy from an Uttarakhand village can do good business and employ others.

6. Disaster Management

Over the past decade, the world has witnessed some devastating disasters that go beyond human comprehension. Earth quakes are caused by the movement in fault lines along the tectonic plates of the earth's crust; and winds, hurricanes and heavy rains are weather related but lately the weather patterns are taking traumatic proportions caused by the global warming due to human activities and use of fossil fuels. These fossil fuels when used in power generation, steel, cement, textile, fertilizer and other industries, release green house gases (GHG) such as CO_2 , methane, nitrous oxide, hydrofluorocarbon (HFCs of ozone notoriety) etc.

The hill ranges of Himalayas are sensitive to global warming. Those who are concerned about global warming would know the number 350 and 350.org. The number 350 is the number of parts of CO_2 per million parts of atmospheric air in which life is sustainable on this earth. Unfortunately, it has already reached 370 parts which warns us to be concerned. Climate change is expected to continue unprecedented melting of polar ice caps (Dyck, 2014). Since 1980, the arctic ice has dropped from 8 down to 4 million square km. which in turn is increasing water levels in the oceans. Sea levels have increased by 1.7 mm per year during 1870 -1994 and has been increasing almost by 3.2 mm per year during 1995-2013. Imagine living in Maldives where the land is only 3 feet above sea level on the average. Sustainability is the new subject in business education. By the way, one of the most decorated environmentalist, a friend of the author, Vandana Shiva is a proud native of Uttarakhand.

Now the question is whether there is a strategy in general to handle such disasters? Most capable countries including India have an excellent disaster management component at the national level as well as at the state level. A country such as Haiti was rendered helpless during the 2010 earthquake. In such situations, UNO, IMF will step in. On the other hand, the first world countries such as USA, Canada and the European countries have big funds set aside as foreign relief. The government of India has NDMA- National Disaster Management Authority at the central level and SDMA-State Disaster Management Authority at the state level and have the emergency access to the excellent support from military, air force and ITBP in the hills near the northern borders. The Indian armed forces are some of the best trained forces in the world. These will always be valuable in planning the aftermath of a disaster. The real task in disaster management is

anticipation and preparing a proactive plan and not as much reacting after a disaster has taken place. This becomes a question of risk management. This situation is analogous to tackling terrorism. You cannot handle terrorism after it has occurred. After a terrorist attack, one can only perform rescue and life saving operation but the attack cannot be salvaged. For stopping a terrorist attack, one has to collect anticipatory information of terrorist's movements, purchase behavior and lay down the spy gauntlet. A shining example is Russian president Putin's handling of terrorists' threat during the 2014 Sochi Winter Olympics. By the way, the intended purpose in this section is to outline what the literature on disaster management suggests rather than commenting on recent rescue operations in Uttarakhand in which Indian army and air force did an excellent job and saved lives.

There are four parts to it. First is to manage the risks involved. Tourism is the major industry in Uttarakhand and the Indian and the Uttarakhand governments are purportedly responsible for safety and well being of tourists as they have done so in the past.

- (i) Risk coverage to tourists and enumeration. There were 18.99 million domestic and 0.1 million foreign tourists during 2006 (uttarakhandtourism.gov.in). This not only includes char dham but the whole of Uttarakhand that includes the Yoga city of Rishikesh and the holy city of Haridwar and 12 national parks and wild life sanctuaries that include the UNESCO world heritage sites –Nanda Devi Biosphere. Reserve and the Valley of Flowers. The author was a member of the Department of Actuarial and Management Science. Any qualified actuary would do a simple calculation to set out an insurance premium for a tourist. Author's senior in Mission school, Mr. Naresh Sharma has been the GM of LIC and is a proud Uttarakhandi. A nominal Rs.10.00 fees for registration and insurance will maintain a record and whereabouts of a tourist. Assuming every tourist is registered, it will generate 19 crore rupees which may cover the risk of any casualty. An actuary will calculate the probability distribution of deaths and injuries that will guide one to calculate premiums. By the way this Rs 10.00 is much cheaper than the Rs.50.00 charged to the Amarnath pilgrims.
- (ii) Weather forecasts and meteorological assessments. Indian Meteorological Department, Ministry of Earth Sciences, Government of India broadcasts the weather news via their website or through news bulletins. In the face of imminent danger, it is important that warnings are broadcast and it is made sure that the surrounding population responds responsively.

- (iii) Strict adherence to building code and avoidance of illegal construction along the tourist's places of stay. This may be a lesson learnt from the Alaknanda river floods.
- (iv) The disaster management logistic model. The subject of Operations Research, also called Management Science, is a quantitative decision making process. There is a well known location-allocation problem within the transportation model. Some days back, the author met Dr S.K. Bhatt (professor at the Asper School of Business at the University of Manitoba, Winnipeg, Canada). Dr Bhatt shared his model of 'general disaster management' with the author. A model that would have 'm' numbers of sources in the designated cities with supplies such as cots, blankets, water bottles, canned food and medical supplies .etc, and 'p' number of destinations where disaster has occurred with given needs. The mode of transportation may be helicopters, trucks, four wheelers etc. It is given that the administration has at their disposal these emergency vehicles as planned. Then the problem is to find the locations 'n' near the disaster area that will make the rescue mission successful. The major difficulty in solving such models is that the demands at the disaster locations may be deterministic, probabilistic or fuzzy demand function.

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