

## **UTTARANCHAL – A PERSPECTIVE\***

-bureaucratic constraints vs health, population and development.

**-J.C.Pant**

### **1. Introduction:**

Earlier known as Uttarakhand, this part of India is home to legends from Pauranic times, and many ancient major pilgrim centers such as Badrinath, Kedarnath, Gangotri, Yamunotri and more, dot the landscape. Ved Vyas is supposed to have written the Vedas, the 18 Puranas and the Mahabharat in Badrikaranya. Adi Shankar, after a short, hectic and strenuous lifespan of 32 years came all the way to shed his physical frame in Kedarnath. The famous quote from the Skandpurana “**In a hundred ages of the gods, I could not tell thee of the glories of the Himanchal**” conveyed to the West by the British mountaineer Frank Smythe, proved to be a magnet to a host of British mountaineers and explorers in the early part of the 20<sup>th</sup> century. The ascent of Himalayan peaks Kamet and Nanda Devi in the first half of the last century, were landmarks in the history of mountaineering prior to the ascent of Everest in 1952. That river Brahmaputra bending round the Namcha Barua massif in the eastern Himalayas, is the very same river t’sampo emerging out of lake Mansarover in Tibet, was the outcome of the strenuous explorations by the famous Kintup brothers of Kumaun in the latter part of the 19<sup>th</sup> century. The British took to exploitation of the forest resources of these regions towards the end of the 19<sup>th</sup> century on a massive scale to supply sleepers for the Indian railways, giving rise to the agitation of hill dwellers under the leadership of late Pandit Govind Ballabh Pant and Kurumanchal Kesari (Lion of Kumaun) Pandit Badri Dutt Pandey, to assert the traditional rights of the local population on the forest resources. The main features of this agitation formed the central piece of the forest policy of the British Government in India and found place in the Indian Forest Act of 1927. Mahatma Gandhi wrote the “Anasaktiyog”, his commentary on the Bhagavad-Gita in Kausani. Pandit Jawaharlal Nehru wrote his book “A Father’s Letters to his Daughter” in Almora Jail. The martyrdom of Shri Dev Suman at a young age of 29 years in July 1944 after a fast-unto-death of 84 days to protest against the prison conditions in Tehri state, was the high watermark of the freedom struggle in Garhwal which electrified the youth, and ultimately led to the merger of the Tehri state into the Indian Union after independence. These are only some of the images of Uttaranchal which have been mentioned in order to place this new state in its true perspective in relation to the rest of the country.

### **2. Recent History:**

The advent of freedom in 1947 heralded a new dawn of development, but the pace was nowhere near the rest of U.P. Prior to 1962 the main economic activity of the people residing in these parts comprised of providing for the pedestrian

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pilgrim traffic during the months of May to November, trade with Tibet also during these months, and sustenance agriculture. Since about two-thirds of the total hill area is recorded as forest area, the dependence of the local population on the minor forest resources, as well as essentials such as, drinking water, fodder for cattle, fuel for the household, timber for house construction, grazing areas etc. has always been very substantial. The men folk were traditionally wedded to the armed forces leaving behind the womenfolk to take care of the land, the cattle and the household. Money-order economy was the apt description of whatever cash-flow that took place for trade. Road building activity began to open up new areas to vehicular traffic, and the fruits of development & technology began to seep in to the areas closer to the plains.

The events on the northern borders in 1962 changed all this almost traumatically. Trade with Tibet came to a standstill, and road building assumed ferocious proportions. This had both beneficial and harmful effects. The opening up of remote areas was a positive development as well as a negative one. The pedestrian pilgrim traffic was nearly totally converted into vehicular traffic leading to the winding up of a large number of halting places for pedestrian pilgrims. The lowly shopkeeper and dharamshala (Chatti) keeper was thrown out of employment, to either withdraw into the interior village or become a petty contractor in the P.W.D. The hasty road building activity led to massive landslides during the rains making Uttaranchal today vulnerable to the disaster of landslides which adversely affects agriculture, animal husbandry and allied economic activities. The extensive road network is also paving new avenues for the builder mafias of the plains, casting fresh pressures on the fragile ecosystem and the water resources. As elsewhere in India, the fruits of development have gone primarily to the better-off sections of society as well as to the locations nearer the plains, leaving a large section of the people marginalized.

### **3. Administrative Apparatus:**

Soon after the events of 1962, the border districts of U.P came under the direct supervision of the Chief Secretary, and this arrangement lasted for about a decade. A separate Hill Development Department to focus attention on the Commissioners' Divisions of Kumaun and Garhwal, then respectively having three and five districts, was set up by the U.P Government, primarily to steer the course of planned development in these parts. While this arrangement brought about rapid economic development till about the middle of the eighties, the bureaucratic battle of turfs between the Secretary of the Hill Development Department, and the Secretaries of the Line Departments, retarded the pace of economic development in Uttarakhand, in the last decade of the last millennium. The discontent that was brewing, acquired a flash point on the issue of reservation in admission to schools as well as government employment, that was thrust on these parts in the early nineties, leading to the snowballing of peoples' discontent into a demand for a full fledged separate state of Uttaranchal. After a decade long, near bloody agitation, the state of Uttaranchal finally came into being on 9<sup>th</sup> November, 2000 arousing new hopes for a better future.

#### **4. The New State of Uttaranchal:**

Uttaranchal now comprises of 13 districts, 12 of which were part of the erstwhile Uttarakhand region of Uttar Pradesh. Haridwar, the 13<sup>th</sup> district was earlier part of the Saharanpur district of U.P. The 3 districts Haridwar, Dehradun and Uddham Singh Nagar are the most populous ones and are contiguous to the plains of U.P. The population density in these 3 districts, ranges from 612 in Haridwar to 424 in Uddham Singh Nagar and 414 per sq. kilometer in Dehradun. In other districts, the population density is as low as 37 in Uttarkashi and as high as 205 per sq. kilometer in Almora. These figures of density of population may give the erroneous impression that there is plenty of space in the hills for accommodating a higher population density. The nature of the terrain, however dictates otherwise. The space for locating habitations is very limited in the hills, and the population density should be measured with respect to the land available for locating habitations.

The sex-ratio expressed as females per thousand males, in Uddham Singh Nagar of 902, to 893 in Dehradun and 868 in Haridwar is the lowest in the entire region. It is very difficult to draw definite conclusions regarding the status of women in Uttaranchal from these figures, because of substantial male migration to the plains from the hilly regions. The prevailing concept of judging the status of women from these figures of sex-ratio itself needs to be reviewed, as world over there is a decline in the number of females with respect to the number of males. Though the dowry system in marriages is not prevalent in the hills, the lot of women who have to trudge long distances to fetch water and fuel for the household, and fodder for the cattle, is far from being satisfactory. The near absence of modern healthcare facilities near the remote villages makes the quality of life for women very adverse.

The phenomenon of migration to the plains from the hills is well known. It is therefore, a matter of concern that the population density per square kilometer has increased substantially in the last decade. In spite of these adverse circumstances, the literacy rates, both male and female in Uttaranchal are very encouraging. However, mere literacy would not take the people far unless the quality of education improves substantially. There is an urgent need that the euphoria generated by the creation of the new state is channelized at the earliest, to take advantage of the very favorable literacy rates. It is possible that with imaginative political, social and administrative leadership, a programme of population stabilization and economic development can be built involving the people of the region. This would call for getting over some of the recriminating issues that were thrown up during the agitation for the new state. The deficiencies of the administrative apparatus too would need to be addressed in right earnest.

Provisional population totals of Uttaranchal as per the Census Of India 2001, and Table-I giving Population distribution, Percentage Decadal Growth, Sex Ratio and Population Density, are placed at **Annexure-I** (Pages 11 & 12).

## **5. Assets of The Bureaucracy:**

A fully trained and motivated bureaucratic system is in place in the new state. Fortunately great care has been taken to take some of the best officers from the state of U.P who have long experience of governance and who are known to be giving their very best in streamlining the administrative procedures in the new state. Building the apparatus of governance in a new state is a slow and tortuous process and the impatience of those in a hurry can make things difficult for the bureaucracy. This is where the senior officers would need to provide positive administrative and social leadership. This is a challenging opportunity also for the bureaucracy to innovate in laying down helpful and people-friendly procedures, in order to enable the fruits of development to trickle down to the poorest and the weakest sections of society.

## **6. Constraints of The Bureaucracy:**

The umbilical links with U.P in various Line Departments have now to be severed very carefully, and more economical and functional systems have to be evolved. This again is a painful process with the parent state likely to assert itself like a big brother. Fortunately, the political leadership and top bureaucracy in U.P is very considerate and it is expected that the task of completing the surgical operation of separating the administrative apparatus of Uttaranchal from U.P would be performed successfully within a short period. The division of assets between the two states may prove to be slightly more intractable, and this is where the tact and skill of the top political and bureaucratic leadership of Uttaranchal would be called into play.

## **7. Issues in Development :**

A bureaucratic system is eminently suited to a top-down delivery process, and to the extent various aspects of stabilizing population and evolving appropriate development strategies call for delivering a top-down program, the existing system may not pose any difficulty. However, both population stabilization & grass-root development programmes call for a bottom-up approach, in which an established bureaucracy does not find itself in a very happy position. The need-based village-level planning for population stabilization, as well as for economic development has so far not been addressed seriously anywhere in India, and addressing this should be a top priority for the bureaucracy in Uttaranchal. This may call for laying down appropriate systems at the block and district levels which have still not been thought of anywhere in India. The manner of dealing with issues arising out of programmes being implemented in the field at the state secretariat, which have a bottom-up flavor, has also not been worked out in any state or even at the government of India level. The new bureaucracy in Uttaranchal may well take upon itself this worthwhile exercise.

Another special feature of the bureaucracy in erstwhile Uttarakhand as well as now in the new state of Uttaranchal, is the prominence of the forestry

bureaucracy. As mentioned earlier, the near total dependence of substantial part of the population on the forests and the forest bureaucracy, has created an adversarial relationship between the people and the forest bureaucracy, which is now only beginning to mature into a healthy relationship. In the bureaucratic set-up also a situation of forest bureaucracy vs the remaining bureaucracy seemed to operate, thereby seriously affecting the normal economic development of people and areas contiguous to the forests. In order to sensitize the various role players to these issues, a workshop was organized in Dehradun on 28<sup>th</sup> -29<sup>th</sup> July, 2000 for which a concept paper was circulated. Though the workshop was very well attended by prominent members of the forest bureaucracy, the same cannot be said of the remaining bureaucracy. The forest bureaucracy provided valuable insights and contributions to the outcome of this workshop. In order that the remaining bureaucracy is also sensitized to the concepts that went into this workshop it has been thought appropriate to enclose the concept paper of that workshop. This concept paper is placed at **Annexure- II** (Pages 13 to 16).

**8.** The main approach of this workshop was to evolve model need-based village-development plans keeping three variables in mind.

- (i) Village is overpopulated or population is not a problem,
- (ii) Village is close to the markets or marketing of produce is a problem,
- (iii) Village is vulnerable to natural calamities or not.

The importance of need-based village-level planning for Uttaranchal arises from the fact that over 50% of the total over 15 thousand villages are approachable only by bridle tracks which can be covered by pony or on foot. Even this need-based village-level development planning must involve the local communities, otherwise plans made by outside elements, however well-intentioned would not meet the felt needs of the people. Implementing such plans should again be entrusted to the local communities in order to generate employment for them. A bland area-approach to development just cannot deliver services to people anywhere near their villages. This workshop to formulate a strategy of development which would take care of individual villages, was therefore of crucial significance.

Following this workshop, a need was felt to carry out a comprehensive orientation programme for block level functionaries of all the districts, and the same was organized at the Watershed Directorate, Dehradun in the months of August and September, 2000. In all, 70 odd block level functionaries from 12 districts of Uttaranchal participated in a four-day orientation programme, and valuable insights were derived. Accordingly, in order to invite the attention of the concerned people in the Government of India, a letter was addressed to Shri Arun Shourie, Minister of State for Programme Implementation. This letter is placed at **Annexure-III** (Page17). Soon after the formation of the state of Uttaranchal, it was felt that these matters need to be brought to the notice of the top bureaucracy, and accordingly a letter placed at **Annexure-IV** (Page 18) was given personally to Shri Ajay Vikram Singh, Chief Secretary, Uttaranchal. A very important outcome of this workshop as a conclusion was that the forest bureaucracy should be fully involved in the population and development related

programmes in development blocks contiguous to forest areas. Similarly, in evolving need-based village-development plans all over the state of Uttarakhand, the local Divisional Forest Officer and Forest Range Officer should be associated to ensure that forestry related concerns in development programmes concerning women are fully addressed. Reducing the distance women have to walk to fetch drinking water, fuel for the hearth and fodder for the cattle should be addressed on priority by the concerned line-departments in consultation with the forest officers.

### **9. People-friendly Economic Development:**

Uttarakhand has now to develop to its full potential which it was denied so far. Being the abode of **Devatma Himalaya**, there is almost an unlimited scope for promoting pedestrian pilgrim Yatra routes which will provide livelihood to the major part of the population of the state. This would also be environment-friendly form of low-cost tourism as against high-cost five-star tourism which would cast unbearable strain on the fragile ecosystem. Due to migration to the plains there is a perpetual reduction in the manpower for agriculture, due to which peripheral cultivable lands at some distance away from the households are left out of cultivation. This can be taken care of by a programme of consolidation of holdings which would make cultivation easier. Growing Rajma in the higher regions would provide ready cash to the farmers. Exporting potato-seed can become a very attractive choice for the farmers. Quality hybrid seeds can also be grown in these parts which would fetch a good price for the farmers. Off-season vegetables have a growing market for hill areas adjoining the plains. Growing edible nuts as part of horticulture would ensure that the farmers' crop does not perish on his fields for want of markets. Cattle-care should be an important component of agricultural programmes, to develop draught power as well as for supply of milk close to habitations. Women are the main workforce in agriculture and reducing their drudgery by introducing appropriate technological innovations in agriculture as well as in housekeeping should concern the development planners. This would enable women to manage their time more creatively in order to improve the quality of life for them.

Micro-hydel has enormous potential and it is a matter of surprise that it has not been promoted so far, in place of the mega-hydel projects that threaten the very existence of Uttarakhand. There are a large number of public schools in a few hill stations and other places, and there is no reason why many more such centers of quality education cannot come up all over the state. Information technology would find the environment of Uttarakhand ideal and it is a happy augury that the state government is already addressing this issue quite vigorously. Opening of Kanya Gurukuls to be managed by Mahila Mandals, at the Panchayat level to provide for life-education to girls who have passed class V, but cannot move on to the middle school because of the distance, would be an ideal programme for women's empowerment at a very low cost. This life-education could consist of literacy, numeracy, handicrafts, cattle-care, developing seed for agriculture, cultivation and processing of herbal plants, food processing, nursing, maternity-care etc. to be provided by well-trained female workers who would have been

given at least three months training for each of these items. This would generate employment for women and would encourage them to take on other developmental activities in the areas close to their households and villages. Rainwater conservation must be addressed through promotion of appropriate vegetation in all parts of Uttaranchal. These are only some of the ideas that come to mind and many more programmes could be evolved in consultation with knowledgeable people.

#### **10. The Health Status in Uttaranchal:**

The statistics relating to the usual health indicators for Uttaranchal appear to be favorable when viewed as a macro picture. It has already been mentioned earlier that over 50% of the total villages in Uttaranchal, inspite of a wide road-network, are only approachable on foot or on pony. The access to whatever health infrastructure that exists, for a large section of the population is, thus very difficult and in many cases, even impossible. There are limitations regarding establishment of new institutions relating to the health infrastructure due to nature of the terrain. The strategy for expansion of healthcare, would therefore have to take these factors into consideration. The statistics relating to the existing medical & health infrastructure are given in **Annexure-V** (Page 19).

#### **11. Disease Burden:**

The difficult Himalayan terrain has made the people hardy and tough, which stands the best of the male population in good stead, in their careers in the armed forces. There are no specific studies available on the disease burden in the whole of Uttaranchal. A large proportion of women, children, the old and the disabled, however, find their environment difficult to cope with. Anemia in pregnant women is very common due to which the incidence of low-birth-weight babies is very high. The fact that women during pregnancy have to keep on working for long hours, is a major contributory factor for high incidence of foetal loss. The difficult hill terrain causes many accidents both vehicular as well as pedestrian, primarily on account of drunken-driving as well as due to falls on steep terrain. Trauma and orthopedic cases form a substantial proportion of the hospital bed-occupancy. Landslides crashing into villages and episodes of earthquakes also cause a large number of trauma cases. Respiratory Tract Infections not attended in time lead to a large number of cases of chronic bronchitis, asthma and tuberculosis. The habit of liquor-consumption amongst the male population accentuates the incidence of T.B., which in turn infects the women. In new habitations where houses have been constructed on drainage lines, thereby obstructing the natural flow of rainwater, gastrointestinal tract infections form a substantial part of the disease burden. These include hyperacidity, dyspeptic symptoms, gallbladder infections, worm infestation, amoebiasis, dysentery, gastritis, diarrhoea etc. Leprosy is prevalent in certain parts of the state and needs special attention. There is considerable prevalence of S.T.D and V.D in certain parts of the state which is known to complicate T.B cases very adversely. There is considerable incidence of iodine deficiency in certain parts of the state. Malaria is prevalent in the three plains districts to a

considerable extent. The strategy of development, would therefore, have to be suitably tailored to support the strategy for healthcare. This seminar on population & development, therefore is very timely and ought to assist the state government in formulating its programmes relating to development as well as healthcare.

## **12. Medical & Health Administration:**

There is a Directorate of Medical, Health and Family Welfare (M.H & F.W) under the charge of a Director General, Medical, Health & Family Welfare. There is a separate Directorate for Indigenous Systems of Medicine & Homoeopathy (I.S.M. & H). Though there is one Secretary, Medical, Health & Family Welfare at the State Secretariat level, there are two Cabinet Ministers, one looking after the charge of the Director General, Medical, Health & Family Welfare, and another looking after I.S.M. & H along with Medical Education, strangely under the charge of the Finance Minister. For a new state with special healthcare problems, there is an urgent need to evolve methods of integrating the various systems of medicine, which if achieved, would be a signal contribution to the issue of healthcare throughout India. Unfortunately, I.S.M & H, which has been the backbone of traditional healthcare system has been, in recent years, trying to develop along the lines of development of the modern systems of Medicare. The strength of I.S.M & H. was in its decentralized character, covering hamlets and villages. Can the state of Uttaranchal launch its I.S.M & H. in the traditional direction to serve the remote villages and hamlets?

Integration of the different systems of medicine has to start at the peoples' end, and not at the specialists' end. Public health is already an item of neglect in modern Medicare. Preventive and Social Medicine (PSM) receives scant attention of the MBBS, MS & MDs, and reluctance of doctors to stir out of cities is well known. Perhaps, lay people, local bodies, Panchayati Raj Institutions, NGOs, doctors of different systems of medicine can be brought on one platform to promote public health, primary healthcare and population stabilization. The established bureaucracy in the state can play an important role in evolving methods of functioning and coordination in this area of healthcare which is crying for attention. Given the favorable health and population indicators, the task of population stabilization in Uttaranchal, according to the DG, M.H. & F.W. can be achieved by the year 2006. A statement giving the demographic progress to this target date is placed at **Annexure-VI** (Page 20).

It is understood that out of 1182 vacancies for male MBBS ordinary grade doctors, only 740 are in position. Similarly out of 147 vacancies for female MBBS doctors, only 108 are in position. Why cannot BIMS doctors be posted to these vacancies? This could become one of the directions of integration between the MBBS & BIMS doctors. There is no reason why every PHC should not have one BIMS doctor to take care of outdoor patients and one MBBS doctor to take care of the patients with special problems like, T.B, leprosy, etc. as well as the indoor patients. Reproductive and Child Health (RCH) is another programme where integration of different systems of medicine can be planned successfully.



Uttaranchal has a good record of terminal methods of sterilization, both male and female. The coverage of children in immunization is less than 70%, which may be better than many parts of the country but which definitely needs improvement. The state has fixed a target of reducing their Infant Mortality Rate (IMR) from the existing 61 to 56 by the year 2006. The figure of IMR of 52 from the SRS of 1999 for Uttaranchal seems to have been extrapolated from the SRS figures of UP state, which means that the sample-size for this SRS figure was not representative.

A very good innovation that has been made in Uttaranchal to integrate various vertical health programmes, is the formation of the “**EMPOWERED COMMITTEE FOR NATIONAL PROGRAMMES OF MEDICAL, HEALTH & FAMILY WELFARE**” as an autonomous registered society. The Chief Secretary is the Chairman of the Governing Body of this society, which has under it five Executive Committees chaired by the Secretary, Medical & Health for the five vertical programmes i.e. RCH, Leprosy Elimination, AIDS Control, T.B Control and Blindness Control. The Director General of Medical, Health & Family Welfare is the Member-Secretary of the Governing Body. The State Programme Officers of the concerned vertical programme are each, Member-Secretary of the respective Executive Committee. At the district level, however, there are separate district committees for the separate vertical programmes which need to be integrated in their functioning, in order that the Rural Health System which has the ANM (Auxiliary Nurse Midwife) as its main functionary may deliver these vertical programmes to the people who need their services. This society was registered only recently on 19<sup>th</sup> April, 2001. There is need for involving voluntary agencies to assist the ANM in promoting rural and urban healthcare.

### **13. The Future Prospects:**

There is a great opportunity for the bureaucracy in Uttaranchal to write on a clean slate, and give the people of the state a system of governance which would address all aspects of problems relating to population stabilization & development. The voluntary sector in this state is quite active and willing to work with the government to implement meaningful programmes. The Sarvodaya Movement led by the Saint of Pawanar, Sant Vinoba Bhave had very prominent field activists from Kumaun and Garhwal, which later on became the famous Chipko Movement to protect the environment. It must be appreciated that improved sustainable management of natural resources is not only important from the point of view of economic development, it is also very important for public health. This would be an important area of activity to generate meaningful employment for people in Uttaranchal. A programme to involve civil society, students, voluntary agencies and the governmental system including major national institutions in Dehradun to manage the natural resources, protect the environment and restore the eco-system has been planned as **Mission Make HASTE** which is placed at **Annexure-VII** (Pages 21 to 25). Women were the main inspiration behind the Chipko Movement and women can provide leadership in programmes for managing the natural resources, improving the environment & the eco-system, the health status of women, children and the old.

There is strong anti-liquor movement in this state led by women who suffer most on account of the habit of liquor-consumption of their men folk. Liquor-consumption amongst the male population is also a major health-hazard, and in fact drunken-driving is the main cause of road accidents which can be listed as a major disaster in the hills. Till sometime ago all the districts in Uttaranchal were covered by the prohibition policy of the state of U.P and liquor-consumption was totally prohibited. However, this was smartly circumvented by consumption of **Mrit Sanjivani Sura**, an allegedly Ayurvedic preparation which has a heavy percentage of pure alcohol. The favorable sentiments for ISM & H, were thus being exploited by vested interests to promote consumption of alcohol by another route. The advocates of five-star tourism in Uttaranchal do not favor a policy of prohibition banning total consumption of liquor, and advocates of raising revenue through sale of liquor are also against it. May be, the state can go in for total ban on consumption of liquor, except in five-star hotels which could make available liquor to their clients at a high cost. This would also please both the advocates of five-star tourism as well as those concerned with raising revenue through sale of liquor. Fortunately, the state Chief Minister is known to be against liquor-consumption but he has to contend with both the advocates of five-star tourism as well as those concerned with raising revenue.

Under the auspices of the High Powered Committee (HPC) set up by the Government of India to prepare disaster management plans, NGO-Consultations were held at the state and district level in Uttaranchal involving over 100 very vibrant voluntary agencies, which went into nearly all aspects of development in order to prevent and mitigate disasters. A similar process can be initiated to address issues relating to population stabilization, health aspects and development. The mindset in the traditional method of bureaucratic functioning has been known not to encourage governmental functioning in collaboration with voluntary agencies. There is a great opportunity for both the bureaucracy and the voluntary agencies in Uttaranchal to initiate collaborative methods of working together. The Zilla Saksharta Samitee (ZSS) can provide an effective forum for NGO-Government interaction at the district level. In fact the ZSS can evolve as a federation of voluntary agencies at the district level, with a stipulation that all voluntary agencies must have a component of promotion of literacy along with whatever may be there specialization in development. Health and population concerns can also be included in the activities of the NGOs operating in Uttaranchal. The ex-servicemen who return to their villages from the armed forces at a young age constitute a very significant proportion of the able-bodied male population, and they have a high level of motivation for serving their society. There is an urgent need to mobilize them for various welfare programmes. With the formation of Uttaranchal, many people who are talented and educated are keen to return to serve the new state. Their energies need to be properly channelized. Retired people with rich experience are also keen to offer their honorary services. Indeed, the state has the potential of becoming a **Paradise on Earth**.

ANNEXURE-I

# CENSUS OF INDIA 2001

## Provisional Population Totals of Uttaranchal

### FIGURES AT A GLANCE

I. (a) Number of Districts	13		
(b) Number of Tahsils	49		
II. Area in sq. km.	53,483		
III. Total Population	Persons	8,479,562	
	Males	4,316,401	
	Females	4,163,161	
IV. Decadal Population Growth (1991-2001)			
(a) Absolute	1,366,079		
(b) Percentage	19.20		
V. Density of Population	159 per sq. km.		
VI. Sex Ratio	964 females per 1,000 males		
VII. 0-6 Population	Persons	Males	Females
(1) Absolute	1,319,393	692,272	627,121
(2) Percentage to Total Population	15.56 percent	16.04 percent	15.06 percent
VII. Literacy	Persons	Males	Females
(1) Absolute	5,175,176	3,044,487	2,130,689
(2) Rate in percentage	72.28 percent	84.01 percent	60.26 percent

**TABLE-1**

Population distribution, Percentage Decadal Growth Rate, Sex Ratio and Population Density, Uttaranchal

Sr. No.	State/District	Population 2001			Percentage decadal growth rate		Sex-ratio(females per 1000 males)		Population density per sq. km.	
		Persons	Males	Females	1981-1991	1991-01	1991	2001	1991	2001
1.	2	3	4	5	6	7	8	9	10	11
<b>05</b>	<b>UTTARANCHAL</b>	<b>8479562</b>	<b>4316401</b>	<b>4163161</b>	<b>24.23</b>	<b>19.20</b>	<b>936</b>	<b>964</b>	<b>133</b>	<b>159</b>
1.	UTTARKASHI	294179	151599	142580	25.54	22.72	918	941	30	37
2.	CHAMOLI	369198	183033	186165	21.97	13.51	982	1017	43	48
3.	RUDRAPRAYAG	227461	107425	120036	17.51	13.44	1094	1117	106	120
4.	TEHRI GARHWAL	604608	294842	309766	16.59	16.15	1048	1051	128	148
5.	DEHRADUN	1279083	675549	603534	34.66	24.71	843	893	332	414
6.	GARHWAL	696851	331138	365713	9.05	3.87	1058	1104	124	129
7.	PITHORAGARH	462149	227592	234557	14.11	10.92	992	1031	59	65
8.	CHAMPAWAT	224461	110916	113545	34.22	17.56	945	1024	107	126
9.	ALMORA	630446	293576	336870	9.43	3.14	1099	1147	198	205
10.	BAGESHWAR	249453	118202	131251	14.92	9.21	1055	1110	99	108
11.	NAINITAL	762912	400336	362576	30.01	32.88	881	906	149	198
12.	UDHAM SINGH NAGAR	1234548	649020	585528	44.46	27.79	863	902	332	424
13.	HARDWAR	1444213	773173	671040	28.44	26.30	846	868	485	612

**Concept Paper for July 28-29, 2000 Workshop on  
Village Level Planning for Landuse and Prevention of Natural  
Disasters in Himalayan Region of Uttar Pradesh**

**Mr. J.C.Pant I.A.S (Retd.)**

Chairman, High Powered Committee  
(Disaster Management Plan)  
Department of Agriculture & Cooperation,  
Government of India

**Dr. Kailash Govil**

Regional Project Coordinator, FAO  
Capacity Building for Sustainable Forest  
Planning in South Asia Region  
(GCP/RAS/162/JPN)

**The Problem**

Himalayan Tract is a major natural hazard-prone region due to its fragile geological formation, geographical location, and the nature of the climate. Proximity of its dense human settlements to natural hazards converts these hazards into disasters and lack of prior appropriate information, poor knowledge, lower capacity to appreciate relative utility of alternative landuse options, and insufficient resources to adopt the safe option, aggravate the impact of such disasters. At micro-level, declining forest health, expansion of agriculture to marginal uplands and declining quality of human life is challenging the sustainability of Himalayan landscapes and the life forms they support. Past macro-level-policy-based developmental efforts have not been able to address such trends at micro level.

**The Basis**

The basis of this workshop rests on two assumptions. First that there is need to change, and second that the humans, individually and collectively have the capacity to accelerate natural processes of destruction as well as of conservation of natural resources like land, either consciously or otherwise.

This workshop has a vision and mission, and solicits help from participants to develop appropriate alternative package of activities to achieve them. The grand vision is to have sustainably developing healthy landscapes that promote and support happy and contended life forms. The mission is to develop such landuse patterns that can support and sustain Himalayan ecosystems.

Land use planning is generally misunderstood as a process where planners tell owners and managers of the land what they should do. The landuse planning in our context means development of options and building capacities of owners and managers to make right choices that enhance welfare of society. This landuse planning thus differs from mere farm planning, as it embraces not only

satisfaction of an individual or household but also the welfare of the entire community or society. The workshop is therefore, about developing package of activities to provide appropriate options for landuse, taking into account prevention of natural disasters also and building capacities of owners and managers of the land to take right decisions.

To develop such landuse options, the workshop proposes to concentrate on natural and anthropogenic factors and processes that affect sustainability of landscapes, its resilience to cope with natural hazards like landslides, proximity of vulnerable habitats and options for relief, rehabilitation and reconstruction after natural disasters. These options will examine the strengths and weaknesses of social, political, governmental and non-governmental institutions within its boundaries as well as coordination among them and integration within them to improve their efficiency, utility and value for society in general, and community and individual in particular.

Vulnerability of a population to natural hazards is often correlated with poverty and poor awareness about them. Economic and social development programs should address these constraints and help to minimize vulnerability to hazards and their impact on life forms. Therefore, development projects, which enhance income and diversification of employment of opportunities over space and time, improve capacity of land to support higher levels of population, and also improve awareness, skills, tree and crop varieties, livestock breeds, irrigation, drainage and communication networks, also reduce the vulnerability of the population to the disturbances caused by natural disasters. The workshop, therefore, proposes to examine income and employment options, training and education support, coordination and integration of activities among and within different line agencies and institutions, including NGOs.

## **The process of Landuse Planning**

Landuse planning by definition is non-sectoral but its implementation usually requires a sectoral approach. One major lacunae in the current system of promoting development through different agencies is the total lack of mutual understanding of the role of each agency, because of which even honest efforts at coordination amongst them do not bring about the desired results. The workshop aims to develop this mutual understanding amongst participating agencies, and this is expected to be the most prized outcome of the workshop.

Process of landuse planning is a continuous and iterative process. It needs transparent participation of all “well informed” stakeholders. Land with less constraints offers few alternatives and it is easy to plan landuse. However, land with less constraints provides more options and is therefore more difficult to plan. The step-by-step process of landuse planning may be defined by following set of six questions,

(1) What is the present situation of landuse and landuse planning and its implementation?

- (2) Is change desirable?
- (3) If change is required then what exactly needs to be changed?
- (4) What options are available?
- (5) How to identify the best option?
- (6) How to implement the selected option?

## **The Design**

This has led to the following design of six sessions during the proposed two-day workshop. The inaugural session lays the foundation and provides the roadmap for the workshop. The second session draws upon the state of current landuse and its planning processes including proposed changes to be addressed by all the participants. It would also try to gauge the expectations of the participants. The third session presents the key draft for the village-level landuse-planning including prevention of natural disasters, in order to seek valuable inputs from the participants. The fourth session attempts to develop by stratifying villages on the basis of (a) market power, (b) population pressure, and (c) their vulnerability to natural disasters. The fifth session attempts to synthesize the stratified approaches. The sixth and last session presents the final outputs and plan for future action and follow-up activities.

This design raises certain questions like the following.

- (1) Is there need to change landuse-planning at the village level?

For example, review of past landuse-planning practices, change in condition of land, level of satisfaction of different demands from land, may ask for a change.

- (2) Can villages in each of the districts be stratified, based on market influence, population pressure and vulnerability to disasters?

For example, villages in each district may be broadly classified as

Villages near markets, and  
Villages distant from markets.

Each of these categories could be further divided into

More vulnerable to disasters, and  
Less vulnerable to disasters.

Each of these four categories can further be subdivided into villages, which are facing more problems due to over population and those who are facing less problems due to their lower population density. This process would give rise to eight types of groupings of the villages in each district.

(3) Can alternative village level package or options of land-based activities suitable for each of the eight types of group of villages be evolved?

For example, different technical agencies may provide necessary information on what activities should be avoided and what activities should be preferred for developing packages of village-level-landuse activities. The CDO may like to constitute a multidisciplinary group to evolve the packages of activities for each of the eight groups of villages. Till such time such packages are made available, the task of developing landuse plans may continue on the basis of available knowledge of eco-friendly practices. A copy of a sample of such package of activities circulated by Ministry of Agriculture, Government of India through its letter of March 27, 1995 is enclosed for ready reference.

(4) What should be the basis, process and mechanism for people to assess and select from alternative options?

For example, alternative options may be assessed and the right one chosen for a village through a PRA type process among different service providers (departments like forest, agriculture, horticulture, minor irrigation etc.) and stakeholders like villagers, panchayats, and NGOs etc.

(5) How to implement and provide the desired services for the selected option?

The proposed multidisciplinary group to be set up by the CDO can facilitate and organize an efficient delivery mechanism to allocate task to the line or sectoral agencies and institutions in such a manner that there is no duplication of effort of different line agencies.

### **Expected outputs**

Mutual understanding amongst participating agencies to lay a firm foundation for fruitful future collaboration,

A simple framework for developing options or packages of land-based activities, and

A process like PRA that builds capacities of local owners and managers of land to enable them to make the right choice.

**NOTE:** C.D.O stands for Chief Development Officer, at the district level. PRA stands for Participatory Rural Appraisal.



**ANNEXURE-III**

Dated: 5<sup>th</sup> September, 2K

**Subject: Village level Planning for Landuse and prevention of natural disasters in the Himalayan Region of Uttaranchal.**

Dear Shri Arun Shourie,

I am enclosing herewith a concept paper on the subject mentioned above which was the subject of discussion in a two-day seminar on July 28 & 29, 2000. All the district magistrates, chief development officers and forest officers of the twelve districts of Uttaranchal were invited for this workshop. As a follow up of this workshop, it was decided to train in PRA (Participatory Rapid Appraisal) for village-level-planning, the block development team of the headquarters' block of each district-one BDO, and his team of functionaries of different line departments. This training is currently being organized at the Watershed Directorate, Dehradun for four days each, two days for classroom discussions and two days for field visits, in four sessions, each session comprising of development teams of three districts. Each member of these teams is being asked to record his or her views on the defects of the existing development planning system, which prevents natural need-based-village-level-planning by the people themselves.

While the full analysis of this process will take some time as the programme is still in progress (it will be over by the first week of September), one overwhelming reason which prevents village-level-need-based-planning and is being cited universally, is the targeted itemwise planning under the Twenty Point Programme (TPP) which makes complete nonsense of village-level-need-based development planning. There is, therefore, an urgent need to review the Twenty Point Programme strategy for planned development in order to evolve a target-free-need-based planning system.

I have requested the Administrative Training Institute, Nainital to hold a workshop in the second week of April 2001, in order to evolve the policy implications of enabling a village-level-need-based planning system to become possible. We would also need to evolve modified administrative structures for this new approach to development planning, at the block and district levels. Similarly, structural and procedural changes may become necessary at the state government level, as well as at the central level.

I am writing this letter in the earnest hope that you may consider setting up a small group in your ministry to examine this issue. I would be too happy to be associated with such a group whenever it is constituted.

Thanking you and with personal regards,

To,  
Shri Arun Shourie,  
Minister of State for Programme Implementation,

Yours sincerely  
Sd. (J.C.Pant)

## ANNEXURE-IV

Dated: 27<sup>th</sup> November, 2K

**Subject: Village level Planning for Landuse and prevention of natural disasters in the Himalayan Region of Uttaranchal.**

Dear Shri Ajay Vikram Singh,

I am enclosing herewith a copy of my letter dated September 5<sup>th</sup>, 2K\* addressed to Shri Arun Shourie, Minister of State (MOS) for Programme Implementation, Government of India, New Delhi on the subject mentioned above. Contrary to expectations, I have not received any response from the MOS. The subject matter is very important from the point of view of planning in Uttaranchal, and I, therefore, seek your intervention in the matter.

I am also enclosing a copy of a set of papers relating to a meeting taken by Shri Sompal, Member Planning Commission, New Delhi on 17<sup>th</sup> June, 2K at Circuit House Dehradun on the subject of "Mission Make **HASTE \*\***", which could make little headway due to the usual apathy of the governmental system in Uttaranchal. Now that you are at the helm of the governmental implementation system, I seek your intervention in this matter also.

Thanking you and with personal regards,

TO,

Shri Ajay Vikram Singh  
Chief Secretary,  
Uttaranchal,  
Dehra Dun

Yours sincerely,

Sd.  
**(J.C.Pant)**

\* **Annexure-III** of this paper.

\*\* **HASTE** stands for Himalayan Action for Socio-Techno Eco-restoration. A Concept Paper on **Mission Make Haste** is at **Annexure-VII**. This concept paper was evolved over two meetings held on 23<sup>rd</sup> May & 2<sup>nd</sup> June, 2000 in Dehradun in which nearly all the major National Institutions located in Dehradun, as well as prominent social activists and voluntary agencies participated.

**ANNEXURE-V**

**PRESENT STATUS OF HEALTH INFRASTRUCTURE IN UTTARANCHAL.**

<b>ITEM</b>	<b>PRESENT STATUS</b>	<b>REQUIRED AS PER NORM</b>	<b>BACKLOG *</b>
<b>ALLOPATHIC HOSPITALS</b>	<b>328</b>		
<b>WOMEN'S HOSPITALS (RURAL)</b>	<b>36</b>		
<b>T.B HOSPITALS</b>	<b>5</b>		
<b>LEPROSY HOSPITALS</b>	<b>3</b>		
<b>C.H.C</b>	<b>23</b>	<b>64</b>	<b>41</b>
<b>P.H.C</b>	<b>257</b>	<b>270</b>	<b>13</b>
<b>SUB CENTRE</b>	<b>1525+ 84 (Main Centre) = 1609</b>	<b>1805</b>	<b>196</b>
<b>AYURVEDIC HOSPITALS</b>	<b>466</b>		
<b>HOMEOPATHIC HOSPITALS</b>	<b>60</b>		

**\*NOTE: These figures have been obtained from the Directorate of Medical, Health & Family Welfare, Uttaranchal.**

**ANNEXURE-VI**

**ANTICIPATED DEMOGRAPHIC STATUS OF UTTARANCHAL  
RELATING TO POPULATION STABILIZATION IF ALL  
PROGRAMMES ARE FULLY IMPLEMENTED**

<b>Year</b>	<b>Population</b>	<b>TFR</b>	<b>IMR *</b>
<b>2001</b>	<b>8477497</b>	<b>2.68</b>	<b>60.9</b>
<b>2002</b>	<b>8608490</b>	<b>2.58</b>	<b>60.0</b>
<b>2003</b>	<b>8739476</b>	<b>2.39</b>	<b>59.1</b>
<b>2004</b>	<b>8869705</b>	<b>2.28</b>	<b>58.2</b>
<b>2005</b>	<b>8897629</b>	<b>2.17</b>	<b>57.3</b>
<b>2006</b>	<b>9024137</b>	<b>2.1</b>	<b>56.5</b>

**\*NOTE: These figures have been obtained from the  
Directorate of Medical, Health & Family Welfare,  
Uttaranchal.**

ANNEXURE-VII

**MISSION-MAKE HASTE**

**HIMALAYAN ACTION FOR  
SOCIO-TECHNO ECO-RESTORATION (HASTE)**

**HIMALAYAN SOCIAL ECOCULTURE AND  
CONSERVATION MISSION**

**(HISECOM) PHASE-I (2000-2003) ON THE  
DOON BINDAL KHALAS (DBKS)**

An exclusively field oriented Enterprise based on the Mission approach for the time-bound Eco-rejuvenation of the DBKs (Wasteslopes/Lands of the Doon Valley) through socially relevant **Ecocultural Practises** involving such Integrated Programmes as creation of **Fodder Banks, Stray Cattle Pastures, Low-cost Stabilization of Landslips** threatening poorer communities. **Revival of Traditional plantcultural practices** ....., effected as a combined effort of the stakeholders, the participating organizations, students, voluntary agencies and the people.

**A CONCEPT-TO-IMPLEMENTATION PAPER  
(Circulated for comments, criticism and ideas please).**

**(1.0) HISECOM-THE MANDATE:**

To evolve “new” Plantcultures based on both Nature’s versatile and prolific responses/methods and man’s ingenuity for purposes of intensifying and integrating the hitherto Diverse and Extravagant Plantcultural Practices with the objective of rendering them appropriate and compatible for Conservation, and for meeting the essential needs of both human and other forms of life, on degraded /defiled/defaced lands/slops such as “Khalas,” “Nallas,” Water-logged tracts, Landslides, arid areas etc.

**(2.0) HISECOM-THE OBJECTIVES:**

**(2.1) CONSERVATION OF THE INDIGENOUS SPECIES:**

(A) Establishment of large-scale Mixed Plantations of characteristically

indigenous Doon Flora (Trees, Shrubs, Grasses, other undergrowth) comprising threatened/multipurpose, socially useful and aesthetically satisfying species.

- (B) Initiation of an effective field programme to ensure the safety of the still surviving indigenous species of the DBKs.
- (C) Introduction of select indigenous species of the Himalaya found up to 7000 feet altitude as part of the Mixed Plantations as of (A) above, to enhance the Biodiversity of the Doon flora.

## **(2.2) PLANT RESOURCE-BASED SOCIAL-ECOCULTURE-PROGRAMMES FOR THE POORER COMMUNITIES OF THE MISSION AREA:**

- (A) Creation of Tree Fodder Banks (TFB) comprising of high quality fodder tree species indigenous to the plains of India as also of the Himalaya (as found upto 7000 feet altitude).
- (B) Design & Establishment of Cattle Grazing Grounds and Stray Cattle Pastures largely on the Lantana infested slopes of the DBKs.
- (C) Establishment and operation of two distinct types of Social Ecoculture Nurseries (SENs). Type-I oriented towards Field Research, Analysis, Standardization and Testing, and Type-II towards intensive production of saplings/seeds for free distribution amongst the poorer sections of the DBK dwellers, and at subsidized rates to others. The network of SENs proposed for being established to cover the entire Phase-I Mission area would be the New Generation Composite Nurseries with major thrust towards propagation of the hitherto neglected indigenous species (not in the least available in our private & government nurseries), of new and emerging high potential species from the standpoints of Income Generation, Wasteland Reclamation, Landslide Stabilization, Soil Fertility Restoration and Humus Production etc.
- (D) Initiation of Plantation Programmes for Slums/Congested Colonies/Himalayan Hamlets throughout the DBKs, involving creation of Woodlots/Avenues/Parks /Fodder Banks for providing environmental/socio-ecological relief to the have-not communities of these Colonies/Areas/Regions.

## **(2.3) WASTE MANAGEMENT/HUMUS PRODUCTION/HUMUSCULTURE PRACTICES FOR SOIL FERTILITY RESTORATION, NATURAL REGENERATION ENHANCEMENT, WASTELAND RECLAMATION, AND FOOD/FODDER PRODUCTION IN DROUGHT PRONE AND ARID AREAS:**

- (A) Standardization & extension of a humusculture-based strategy for low cost time-bound reclamation of the *Lantana camera* (and other prolifically regenerating species) infested DBK Slopes/ Khalas (Wastelands).
- (B) Standardization and large-scale reclamation of

Wastelands/Aridlands/Undulating lands (Ravines, Khalas, Nallas, Waterlogged tracts etc) through quick digestion of City and Village Garbage inclusive of the much maligned Non-digestible Plastic-wastes. (This is not to promote plastics, but to minimize the damage that existing plastic wastes may cause).

- (C) Promotion and popularizing of the applications of Plastics in general and of utilizing Dust Bin Plastic Waste in particular, in such areas of National concern as Food/Fodder production in Drought prone/Arid areas, Dryland farming in Sub-Himalayan Hamlets, Defence Horticulture and Ecoculture in high altitude Himalayan Regions, Conservation of Water in Indian Agriculture in general, and Himalayan Ecoculture in particular.
- (D) Large scale production of high-grade garbage compost, leaf compost, and a range of ready-made organic mixtures for such applications as accelerated growth of new plantations, high percentage germination, propagation of Clonal/Cutting including Tissue Culture practices, Ready made mixtures for Green House Cultivation, Ornamental Floriculture, Orchid Culture, Rock Crevasses Vegetable Production at high altitudes etc.
- (E) High intensity humus conditioning of the Plantation Pits through a series of operations involving introduction of Cattle/Plant Biomass, Composts/Mulches to ensure accelerated growth of the saplings with consequent reduction of the investments on fencing and security personnel for large-scale Plantations.

#### **(2.4) MANPOWER TRAINING, DEMONSTRATION AND EXTENSION PROGRAMMES:**

- (A) Training of Daily Wage Laborers, (DWLs-skilled and unskilled), Nagar Nigam Safai Karamcharis, Malis etc. in specialized and emerging areas of plantcultures and field operations, such as quick production of high-grade humus, mulching techniques, humus conditioning of plantations pits etc. on the basis of a “**EARN-WHILE-YOU-LEARN**” scheme.
- (B) Organizing of a series of Field Training Workshops at select Mission-sites for officers and men of the Ecotask forces of the Territorial Army, the ITBP, the BRO, the Mountaineering Institutes, the Defence Agricultural Research Labs (DARLs), the Sub-area Headquarters, Cantonment Boards etc. This series of Workshops could also be extended to various NGOs and Voluntary Agencies engaged in specialized disciplines, Welfare/Relief Programmes.
- (C) Organizing of specialized Workshop in the field of Management and Administration of Ecoculture based Sustainable Development Programmes for our difficult/challenging areas, such as the Adverse Environment Regions (High altitude belts, the Hot and the Cold Deserts, the devastating Himalayan Landslides etc.). Such Workshops if meticulously formulated and if given a strong field-oriented bias, for reviving the spirit of field-workers, field-culture, field monitoring of an earlier era, could prove extremely useful for our civil servants, municipal corporators, management cadres particularly those belonging to such natural resource based

industries as mining, paper, forestry etc.

- (D) Development of specialized but nature-oriented Field Research, Training and Demonstration Sites/Field Stations/Complexes to popularize both new generations of Ecoculture Tools, Implements, Equipment Systems as also the emerging plantcultural practices/techniques/strategies including the **EMERGING PLANT SPECIES** which are bound to play a crucial part in the coming years.

#### **(2.5) ECO-EDUCATION & AWARENESS BUILDING PROGRAMMES:**

- (A) Organizing of a series of “**DO-WHILE-YOU-IMBIBE**” field action workshops at the Mission-sites, exclusively for the young/still inquisitive students of our Schools, Colleges, Universities, Institutes in the above areas/fields. It is important that these Workshops should integrate students drawn from all strata of society, be they from Arthur Foots’ “The Doon School,” the Pathshalas, the Kendriya Vidhyalayas, the Municipal Schools, the Schools of the remote Himalayan Hamlets, the New Generation Schools like “The Asian School” and Colleges.
- (B) Organizing of a wide range of Eco-treks for exposure of all categories of students to Wilderness areas and Nature’s processes such as natural regeneration, broad leaved vs conifer forests, eroded sites, landslides, weed infested wastelands etc.
- (C) Setting up of a permanent Exhibition entitled **EXPO-ECOCULTURE-2000-2015** at Dehradun for awareness building and exposure/display of appropriate Ecotechnology/Ecocultural implements/equipments/systems, Emerging species i.e. species hitherto neglected but of increasing importance in the future, Horticultural/ Ecocultural products, Handicrafts based on plant species particularly of the Himalaya, and other adverse environment regions and wide range of emerging plantcultural practices/techniques/strategies. Phase-I of this exhibition is presently on display at 16, Kalidas Marg, Dehradun based on field-works/experiences of the past 25 years.
- (D) Layout, Design and Setting up of an Observation-cum-Standardization-cum-Training Field Station (OBSTRAFs) at Dehra Dun for purposes of organizing Live Field Instructions, Demonstrations and Awareness Building field Exercises/operations, Plantcultural Practices in areas, fields, and related issues and causes, some of which are projected above.

#### **(2.6) RESEARCH, STANDARDIZATION AND ECO-TECHNOLOGY DEVELOPMENT/TESTING:**

This largely field oriented programme would be confined to those areas/fields which have either not been taken up by other Institutes or have remained utterly neglected since long but which are of great socio-economic/ecological/conservational value. It is proposed to initiate work in such areas as:



- (A) Design of low cost energy-cum-performance-efficient ranges of Polyhouses/Greenhouses/Shadehouses/Hardening-houses/Polytunnels for promoting Controlled Environment Horticulture/Nurseries/ Intensive High Value Food Production Systems, suitable for operation throughout the Himalayan belt in general and its highest altitude regions in particular.
  - (B) Development and standardization of Aerobic Digestion Technologies/Practices for accelerated production of Humus from Difficult-to-Digest Species like *Lantana camera*, Thorny bushes, Prolifically regenerating Parthenium-“Congress” grass, *icchorina crassipis* (Water Hyacinthe-“Samunder Sokh”) etc.
  - (C) Development of high performance, low energy consuming Horticultural/ Ecocultural Tools, Implements, Equipment Systems, for such formidable field operations as Landslide Vegetative Stabilization, Large-scale Plantation on steep slopes etc. Even as of today these simply do not exist in our country and both our media and public attention continues to be silent on this crucial subject.
  - (D) Identification of multi-purpose socially relevant Himalayan indigenous Tree Species and launching of a large-scale programme for their seed collection/propagation on the basis of explorations in the Wilderness belts.
  - (E) Identification, large-scale propagation and field-testing of both indigenous and exotic species which are both economically profitable and ecologically compatible for promoting tree farming in the significant altitude-zones of the Garhwal Himalaya. Why should we be shy of introducing those exotic species which have the potential and are thoroughly acclimatized to our silvi/eco-climatic zones?
  - (F) Standardization of a new generation of plantcultural practices for boosting Food/Fodder farming in our drought prone areas/perennially arid and semi-arid areas/high altitude areas, based on Water Conservation Strategies and Humusculture Practices.
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## उत्तरांचल की परिभाषा

विश्व भर के उत्तर जिसके आंचल में हैं उसे उत्तरांचल कहते हैं ।







