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**TOUR REPORT:  
HIMACHAL PRADESH STATE BIODIVERSITY BOARD  
(HPSBB) & BIODIVERSITY MANAGEMENT COMMITTEE  
(BMC) EXPOSURE VISIT TO UTTRAKHAND STATE  
BIODIVERSITY BOARD (USBB).**

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**FROM: 29<sup>TH</sup> TO 31<sup>ST</sup> JANUARY, 2018.**

## **HIMACHAL PRADESH STATE BIODIVERSITY BOARD (HPSBB) & BIODIVERSITY MANAGEMENT COMMITTEE (BMC) EXPOSURE VISIT TO UTTARAKHAND STATE BIODIVERSITY BOARD (USBB).**

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Uttarakhand state provides a matchless wealth of medicinal and aromatic plants & is well known as a natural reservoir and store house of numerous medicinal and aromatic plants. Uttarakhand surrounded with the Garhwal Himalayas along with Kumaon is unique in its geographical characteristics with Tibet (China) up north, Gangetic Plain in the south and Eastern Himalayas in the east. Uttarakhand is recently formed state carved out of Uttar Pradesh on 9<sup>th</sup> November 2000 as the 27<sup>th</sup> state of Republic of India. The State of Uttarakhand comprises of 02 regions 13 districts, 78 Tehsils and 95 community development blocks. The districts lying in Garhwal Region are Uttarkashi, Chamoli, Pauri, Rudrapur, Tehri, Dehradun & Haridwar and the remaining 06 in Kumaon Region are Udham Singh Nagar, Nainital, Almora, Pithoragarh, Champawat & Bageshwar. The human population of the State is 1.01 Crore (2001) compared to 25.18 lacs in 1951 and that of livestock is 50.22 lacs in 2012 as compared to 41.68 lacs (1993). Uttarakhand is endowed with a unique and diverse range of biodiversity and Uttarakhand region is well known for its biodiversity. From the snowbound peaks of the Himalayas to the moist Alpine scrub, sub Alpine forests, dry - temperate and moist- temperate forests to moist deciduous forests, the state possesses a wide biodiversity that in return nurtures a large multiplicity of floral and faunal forms. The state is home to nearly 4048 species of Angiosperms and Gymnosperms belonging to 1198 genera under 192 families. Of these nearly 116 species are specific to Uttarakhand i.e. their geographical distribution is limited to the boundaries of the state. 161 species of flora found in Uttarakhand are recognized as rare or threatened under the categorization of the International Union for Conservation of Nature (IUCN). Out of the 223 species of Orchids reported from the North Western Himalayas, over 150 have been reported from the State. This great floral diversity supports a wide variety of faunal forms too. It includes about 102 species of mammals, 623 species of birds, 124 species of fish, 69 species of reptiles and 19 species of amphibians. Highly endangered species like the Snow Leopard, Musk Deer, Tiger, Asian Elephant, Bharal, Himalayan Monal, Cheer Pheasant, King Cobra etc. find suitable habitat in the forests of Uttarakhand. This precious natural wealth is our common heritage. In order to conserve this heritage, the state has declared twelve areas as 'Protected' including 6 National Parks and six Wildlife Sanctuaries. Nearly 65% of the geographical area of the State is under forest cover, of which over 12% comes under the Protected Area network. This exceeds the national average by a fair margin and is a reflection of the state's commitment to conservation. The Corbett National Park, established in 1936 is the first National Park of the Asian mainland. The Nandadevi Biosphere Reserve, established under the "Man and

biosphere” programme of UNESCO has the honour of being Uttarakhand’s only and the country’s second Biosphere Reserve. This biodiversity wealth is the pride of Uttarakhand.

Major portion of the state is mountainous and these mountains (Himalayas) are one of the youngest mountain systems of the world (40 million years in age compared to peninsular mountains of 1500-2500 million years old) and hence ecologically very fragile and relatively much more susceptible to earthquakes and landslides. Shivalik formations are one of the most important eco-region due to their endemicity and past geological history. The era of Shivalik ecosystem of rocks is called “Age of Mammals”. It is the filtering zone for migration of fauna and flora from highlands to lowlands and vice-versa. It is not only a gateway to the enhanced biodiversity but also to the green and white revolutions, industrialization and creation of livelihood opportunities. This region harbored a rich fauna in the geological past as evidenced by the discovery of fossils of Amphibians, Reptiles and Mammals. The wide altitudinal range is the richest zone in terms of habitat and biodiversity.

Important perennial rivers are Ganga, Yamuna, Bhagirathi, Alaknanda, Ramganga, Nayar, Kosi, Saryu, Sharda and their tributaries. These wetlands, which are some of the most productive and endangered ecosystems, exhibit tremendous faunal diversity from Protozoa to Mammalia. They are roosting & breeding grounds and shelters for migratory and resident birds during various times of the year.

Due to unique bio-diversity, the state of Uttarakhand is also home to several rare and endangered species of herbal and aromatic plants. Realizing the immense potential of this resource in the state, the state government has declared Uttarakhand as a Herbal State. In accordance with the provisions of the said Act, the Government of Uttarakhand vide G.O. No. 1773/x-2-2006-8(83)/2001 TC dated 01.04.2006 constituted the Uttarakhand Biodiversity Board. The Board was reconstituted in 2011 and again in 2013, vide G.O. 121(3)/X-3-2013-8(83)/2001 T.C. dated 14.02.2013.

Uttarakhand Biodiversity Board (UBB) has sent notices to 805 industries in the state to submit a part of their revenue share -- as per the slabs given under the 'access and benefit sharing (ABS) clause of Biodiversity Act -- with the board for using the state's bio-resources such as medicinal plants, keera jari, tejpatta etc. In order to take all those Industries who are using bio-resources on board for ABS, UBB also conducted a survey where 36 bio-resources in Kumon and 10 in Garhwal, which are being used by the industry, have been identified in six districts of the state. These states are Udham Singh Nagar , Almora and Pithoragarh in Kumon and Haridwar, Pauri and Uttarakhand in Garhwal. Uttarakhand State Biodiversity Board’s objective behind the survey conducted across six districts of the state was to connect the network where plants are being cultivated by villagers and purchased by industries at petty prices but sold in form of high value product at much higher cost. Now in order to make industries pay a part of their profit for the proliferation and conservation of these bio-resources and

boost income of cultivators, industries are asked to pay the profit share to USBB which will then pay back to related Biodiversity Management Committee (BMC), a group of local villagers who monitor ABS. An agreement will also be signed between villagers, industries and the board for this purpose.

Himachal Pradesh State Biodiversity Board (HPSBB) is currently working on constitution of Biodiversity Management Committees (BMCs) to implement Biological Diversity Act, 2002 and also for the preparation of Peoples Biodiversity registers (PBRs) in the state. At present about 405 BMCs have been constituted and PBR preparation of 117 PBRs is in the process, 6 draft PBRs have been prepared. There is a need of official learning/training for preparation of PBR, emphasizing on Access and Benefit Sharing Provisions for officials and BMC members. In this connection HPSBB organised an exposure visit for Officials of HPSBB and BMC members of SHimla District to Uttrakhand State Biodiversity Board (USBB) , as the Uttrakhand State Biodiversity Board (USBB) is working effectively in implementing Biological Diversity Act, 2002 in the respective State. The exposure visit provided a great peer learning experience to officer/officials and BMC members working in HPSBB in preparation of PBR and also importance of ABS provisions were highlighted during the fruitful visit to USBB.

### **Meeting/briefing at Uttrakhand State Biodiversity Board:**

Following representatives from Uttrakhand State Biodiversity Board were present during the meeting:

1. Dr. Rakesh Shah (PCCF), Chairman  
Uttrakhand State Biodiversity Board
2. Mr. Dhananjay Prasad, Deputy Director,  
Uttrakhand State Biodiversity Board
3. Mr. Kaul, Consultant, Uttrakhand State  
Biodiversity Board
4. Mr. Satish Chander, Research Officer, Uttrakhand State Biodiversity Board
5. Mr. Ashok Nautiyal, Samvedi NGO, TSG for PBR preparation in Dudhai BMC



Dr. Rakesh Shah (PCCF), Chairman Uttrakhand State Biodiversity Board, was kind enough to address the gathering. He explained the importance of BD Act and also informed about the actual meaning of Biodiversity and Traditional Knowledge in terms of BD Act, 2002. Dr. Shah mentioned that the BD Act, 2002 is also protected by the Judiciary of the country at National Green Tribunal and Supreme Court of India. He informed all about how biodiversity is depleting from the face of earth and how much actual loss till date has occurred. He told that the biodiversity and Traditional Knowledge is not limited by

political boundaries in fact species that are present in Himachal are present in Uttarakhand and Uttarakhand species are also found in China. After speaking about the very rich and varied biodiversity of the country



and value of Traditional Knowledge associated with bioresources he touched on some major subjects like Biodiversity, Law associated with it, Biological Diversity Act, Traditional knowledge and how the system of implementation of BD Act is working in the country. Dr. Shah in his talk mentioned how under the provisions of BD Act, 2002, Gram Sabhas has been overtaken by Biological Diversity Management

Committees (BMCs), thereby he told everyone about the power of BMCs vested by BD Act, 2002. He next talked about the Dudhai BMC where the field visit of HP State BMCs was planned for the day.

Located in the Dehradun district of Uttarakhand, the village of serves as a model and ideal BMC not only for the State but for the entire country as it has been awarded as the best BMC of the country. The Biodiversity Management Committee in Dudhai village of Dehradun was awarded the first India Biodiversity Award under the biodiversity management category for its efforts to control illegal mining in its gram panchayat area and levying of mining fees under the Biodiversity Act. The award was presented at a programme held recently at the Yashwant Rao Chavan Auditorium in Mumbai. The event was organised by the Union Ministry of Environment, Forest and Climate Change in association with the National Biodiversity Authority with support of the Maharashtra State Biodiversity Board. The United Nations Development Programme and others also supported the programme. Mr Shah told that the Act clarifies that bio-resources cannot be extracted without the permission of BMC and its violation is punishable with imprisonment of up to three years. The BMC members of Dudhai organised meetings with the miners and continued patrols for months till the illegal mining ceased. Villagers too have been barred from extracting minerals from the river for construction. This proactive approach of Dudhai BMC has made it receive an award for the best Biodiversity Management Committee (BMC) in the country in the year 2016.



Mr. Shah told that local residents of Dudhai BMC got together to put an end to illegal and rampant mining on the Swarna riverbed, which was destroying the region's ecological balance. The community initiatives have made Dudhai the first village in India to receive financial benefits from the Biological Diversity Act, 2002. Mr. Shah

mentioned that the prospect of confronting the mining mafia seemed unthinkable until villagers and forest officers in Dudhai decided to invoke the Biodiversity Act. The miners were engaged in large-scale extraction of stones and sand for construction work, and locals realised that it was destroying forests and eroding agricultural lands.

Lastly he touched on the challenges that are linked with the implementation of Law (BD ACT, 2002 and Rules, 2004) and conservation of Traditional Knowledge. Lack of understanding of biodiversity and lack of awareness of BD Act, 2002 and Rules, 2004 impose a major threat towards its implementation. He also spoke about some reforms that could be brought in beurocracy sector for efficient implementation of the BD Act and Rules. He also urged for proper sensitization of the Government line departments for smooth implementation and functioning of the BD Act and Rules and also the lack of synergy between the line departments could be countered. So in his final part of presentation he addressed these issues and laid stress on capacity building and proper awareness of all the stakeholders especially including industries sector.

Next Mr. Shah asked Sh. Dhananjay Prasad, Deputy Director, Utrakhand State Biodiversity Board to brief about the background of BD Act, 2002 and also about its provisions. Sh. Dhananjay Prasad, Deputy Director, Utrakhand State Biodiversity Board explained what the term biodiversity means. He then explained the need of biodiversity stating that biodiversity forms an integral part of life for all individuals. A loss of biodiversity would not only cause loss of raw materials but would also have ramifications for global food security and nutrition. Biodiversity loss would not only have a negative implication on the lives of the human beings but also on the lives of other species in the ecosystem; leading to the imbalance in the ecosystem and making it difficult for all the organisms to thrive in their natural environment. Next he mentioned the threats related to biodiversity and brought focus on reasons for enactment of Biological diversity Act, 2002. After giving brief history about CBD and inception of BD Act, 2002 he mentioned that during the period of 2000-2002, a civil society group was commissioned for preparing India's National Biodiversity Strategy and Action Plan. However, this plan was not accepted by the government. Therefore, the government decided to release its own draft on National Biodiversity Plan which was made by the technocrats. The Act of 2002, based on this plan was passed by the Lok Sabha on 2<sup>nd</sup> December, 2002 and Rajya Sabha on 11<sup>th</sup> December, 2002. The objectives of the Act were:

1. Conservation of Biological diversity
2. Sustainable use of its components
3. Fair and equitable sharing of the benefits arising out of utilization of genetic resources.

Apart from these main objectives the Act has also given force to some of the terms of CBD by the following provisions:

1. To set up National Biodiversity Authority (NBA), State Biodiversity Board(SBB) and Biodiversity Management Committees(BMC's).
2. To respect and protect knowledge of local communities traditional knowledge related to biodiversity.
3. To conserve and develop areas of importance from the standpoint of biological diversity by declaring them biological diversity heritage sites.

The Biological Diversity Act of 2002 and the Biological Diversity Rules, 2004 are implemented by National Biodiversity Authority (NBA) at the national level, State Biological Board (SBB) at state level and Biodiversity Management Committees (BMC's) at local levels. Finally he elaborated the role and functions of BMCs and how they can effectively help in implementing BD Act, 2002 in the state and what benefits they can get out of it.

A short 15 minutes documentary depicting the achievements of Dudhai BMC was shown next to give an idea of what the BMC activities are and it also mentioned how Dudhai BMC was able to nail down the mining mafia.

### **Visit to Dudhai BMC:**

Dudhai gram panchayat lies in Sahaspur block Vikasnagar Tehsil of of Dehradun district in Uttarakhand. It is nearly 35 km from the state capital and roughly 28km away from sub-district headquarter Vikasnagar. Of more than 100 families residing in the gram panchayat, almost half of them are BPL (below poverty line). The total geographical area of village is 451.05 hectares. Dudhai has a total



population of 651 peoples. There are about 130 houses in Dudhai village. Dudhai is a medium size village As per constitution of India and Panchyati Raaj Act, Dudhai village is administrated by Sarpanch (Head of Village) who is elected representative of village. Nestled amidst picturesque mountains, Dudhai village of Dehradun district will always be cherished and remembered as the first village to get the best

Biodiversity Management Committee (BMC) in the country. | The award was given away by the union environment minister Prakash Javadekar in Mumbai on May 22 on International Biodiversity Day, 2016 in the presence of members of United Nation Development Program. Dudhai village has successfully curbed rampant mining activities, nipped forest fire in the bud and, also shared benefit over their bio-



resources over their commercial use. They are reinvesting the money in creating a herbal medicinal garden in the village . This BMC will also train other Biodiversity Management Committees in the region to successfully implement Biological Diversity Act, 2002". According to Sh. Kishore Nautiyal, technical consultant, Samvedi NGO, Board has to form about 8000 BMC across the state, out of which 850 have been constituted so far. After the formation of BMCs next process would be for gram panchayat BMCs to make a People's Biodiversity Register (PBR) which has details of all the species of flora and fauna as well places of cultural heritages in it with the help of technical consultant. Samvedi NGO has prepared PBR for Dudhai which has 75 species of tree, 60 of medicinal plants, total 406 vegetation and 201 species of fauna. He further added that this register is a document which can be transferred to next generation for knowledge and, is also handy for legal procedures as well as springboard to deliberate upon any species for commercial gains. Local gram panchayat who are members of BMC has been given supreme power. No outsider or even forest department can take away anything from the revenue or reserve forest, which come under the domain of BMC without their permission. The Act has been made so stringent that any offence has minimum six months of imprisonment and is non-bailable where bail can only be accessed from National Green Tribunal. On our way to Dudhai BMS our first halt was at a bridge over the Swarna river:



**Image:1**

Image1: Swarna river area falling in Dudhai BMC jurisdiction where illegal mining has been tapped.



**Image:2**

Image2: Swarna river area outside Dudhai BMC area where illegal mining is still being carried out.

### **Interaction with BMC Chairman**

The most challenging task was to control the mining in the village. Rajesh Mall, BMC head of Dudhai village said, "Due to rampant sand mining our agricultural fields, situated on the banks of seasonal river, were caving in. The entire village was unanimous in prohibiting mining so villagers fought it tooth and nail and, also took turns for night patrolling.



He said, in the first incident of forest fire, the villagers created forest line and did not let it spread out. They sensitized every one and did not let forest fire happen again. The BMC also permitted Oberai industrialist of Dehradun to start lemon grass farming on 20 bigha village land, on which they have started generating some money out of it. Mal said, their next target is to levy fee over big orchards which contractors are using commercially. The villagers are so protective about their trees that Mal convinced



the regional official of environment ministry to cut down the length of the road, which is to be build through the village from 2 to 3 km in order to save felling of trees for road building.

Rajesh Mall, chairman of the Dudhai Biodiversity Management Committee (BMC), which the villagers revived three

years ago, said that they started night patrols and warned the miners that they would invoke the provisions of the Act, and they could end up behind bars. The forest department also helped BMC Dudhai in managing the situation. This move has ensured that the Uttarakhand Biodiversity Board has issued notices to 600 industries, and collected a little over ₹ 1crore so far. Of this, it has shared ₹ 1 lakh with the Dudhai BMC, which has started developing a medicinal garden (Nav-graha Vatika).

### **Nav-Graha Vatika:**

There is supposed to be 'positivity' in the air courtesy the 'Navgraha Vatika' the garden of nine



planets, constructed inside the Dudhai BMC premises. The garden, which was constructed by putting together representational structures of nine planets along with trees that signify them, is supposed to be

auspicious as per astrology. It is currently open for all the visitors to have a look and learn from the BMCs experience. Following plants comprised of the Nav-graha Vatika:

1. *Imperata cylindrica*
2. *Achyranthus aspera*
3. *Fiscus religiosa*
4. *Prosopis cenneraria*
5. *Calotropis procera*
6. *Fiscus racemosa*
7. *Cynodon dactylon*
8. *Acacia catechu*
9. *Butea monosperma*

### **Lemon Grass Oil Extraction Unit:**

Lemongrass *Cymbopogon* is widely used as a culinary herb in Asian cuisines and also as



medicinal herb in India. It has a subtle citrus flavor and can be dried and powdered, or used fresh. It is commonly used in teas, soups, and curries. It is also suitable for use with poultry, fish, beef, and seafood. Lemongrass oil, used as a pesticide and preservative. It is used at the Oriental Research Institute Mysore, the French

Institute of Pondicherry, the Association for the Preservation of the Saint Thomas Christian Heritage

in Kerala, and many other manuscript collections in India. The oil also injects natural fluidity into the brittle palm leaves, and the hydrophobic nature of the oil keeps the manuscripts dry so the text is not lost to decay due to humidity. BMC Dudhai in consultation with Oberai industrialists of Dehradun has been growing lemon grass and have started extracting oil from it within the BMC



premises. They have established an oil extracting unit for the same.

Used medicinally, Lemongrass Essential Oil's analgesic properties have been found to relieve muscle and joint pains caused by overexertion of muscles through exercise. It is known to boost energy and to reduce fever as well as headaches caused by viral infections such as the flu. It acts as an antiseptic, making it a beneficial ingredient in lotions and creams that prevent wounds from becoming infected. By alleviating abdominal pain, it can relieve stomach aches and ease spasms in the digestive tract. It works as a detoxifying agent by increasing perspiration, thus promoting the expulsion of bodily toxins through sweating. Used cosmetically or topically in general, Lemongrass Oil can eliminate or inhibit the growth of harmful bacteria due to its Citral content, which is known to have anti-microbial properties. Lemongrass Oil can reduce inflammation due to its Limonene content, and it can slow down the flow of blood by contracting blood vessels. When used in shampoos, it is believed to prevent hair loss. Lemongrass makes an effective, non-irritating, inexpensive, eco-friendly deodorant that is long-lasting and does not have side-effects in proper dilution.

#### **Renukaji Wetland Ramsar site tour of BMCs on the eve of World Wetlands Day:**



Renuka lake is in the Sirmour district of Himachal Pradesh and it is 672 m above the sea level. It is a natural wetland with freshwater springs and inland subterranean karst formations, fed by a small stream flowing from the lower Himalayan out to the Giri river. The lake is home to at least 443 species of fauna and 19 species of ichthyofauna representative of lacustrine ecosystems like Puntius, Labeo, Rasbora, Channa. Prominent vegetation ranges from dry deciduous like Shorea Robusta, Terminalia tomentosa, Dalbergia sissoo to hydrophytes. There are 103 species of birds of which 66 are

residents, e.g. Crimson-breasted barbet, Mayna, Bulbul, Pheasants, Egrets, Herons, Mallards and

Lapwing. Among ungulates Sambhar, Barking deer and Ghorals are also abundant in the area. The lake has high religious significance and is named after the mother of Hindu sage Parshuram, and is thus visited by thousands of pilgrims and tourists. Conservation measures so far include community awareness, and prevention of silt influx from eroded slopes and 50 ha. of massive plantation in the catchment. The site is managed by the Shimla Forest Department, Himachal Pradesh. The sanctuary is well connected by the network of motorable roads. The total area of the sanctuary is about 4.028 km<sup>2</sup>. The entire sanctuary consists of Renuka Reserve Forest and has been declared as Abhayaranya. An area of roughly about 3 km<sup>2</sup> that lies outside the sanctuary has been declared as a buffer belt. The sanctuary falls in the biogeographical zone IV and biogeographical province IV as per the classification done by the Wildlife Institute of India (WII). According to forest types classification, the area falls under group 5B/C2, i.e., dry mixed deciduous forest and group 5/051, i.e., dry sal forest. On the eve of World Wetlands Day, the team visited Renukaji wetland area and important information regarding the wetland was imparted to them.