



Initial Environment Examination

Project Number: 47229-001
June 2016

IND: Uttarakhand Emergency Assistance Project (UEAP)

Package: Civil Aviation Work Package No. UK/UEAP-MPH/01/Package 01

Submitted by

Project implementation Unit –CA (Civil Aviation), Dehradun

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Asian Development Bank

EXM/AS

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Letter No.: MPH/PIU (CA)/0507/2015-15

Dated: 29/03/2016

To,
The Country Director
South Asia Department,
India Resident Mission (ADB),
4 Sans Marg, Chanakypuri,
New Delhi - 110021, India

Subject: Loan 3055 IND - Uttarakhand Emergency Assistance Project (UEAP); Submission of 'IEE' Reports for MPH (Package 01 & 02) under Civil Aviation.

Dear Madam,

With reference to above mentioned subject, kindly find herewith attached final Environmental Examination (IEE) Reports for Construction of Multi Purpose Hall (MPH) under UEAP Package 01 and Package 02 for your kind approval.

Enclosure: 'IEE' Reports of MPH (Package 01 & 02) Program.

Yours Sincerely

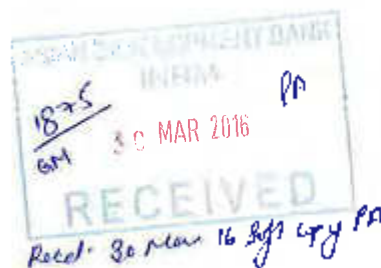
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Program Manager



Initial Environmental Examination (IEE)

March 2016

India: Construction of 8 MPH cum Rescue Centers at Helipads/Heliports in Uttarakhand under Uttarakhand Emergency Assistance Project (MPH: Civil Aviation Work Package No. UK/UEAP-MPH/01/Package 01)

Prepared by State Disaster Management Authority, Government of India, for the Asian Development Bank.

This Initial Environmental Examination (IEE) is a document of the State Disaster Management Authority, Government of Uttarakhand. The views expressed herein do not necessarily represent those of ADB's Board of Directors, Management, or staff, and may be preliminary in nature.

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ABBREVIATIONS

ADB	Asian Development Bank
CFE	Consent for Establishment
CFO	Consent for Operation
CPCB	Central Pollution Control Board
DM	District Magistrate
DoT	Department of Tourism
DSC	Design and Supervision Consultant
dB	Decibel
EA	Executing Agency
EARF	Environmental Assessment and Review Framework
EIA	Environmental Impact Assessment
EC	Environmental Clearance
EMMP	Environmental Management and Monitoring Plan
FATO	Final Approval and Take Off Area
GMVN	Garhwal Mandal Vikas Nigam
Gol	Government of India
GoU	Government of Uttarakhand
Ha	Hectare
IEE	Initial Environmental Examination
ITI	Industrial Training Institute
JRDNA	Joint Rapid Damage and Needs Assessment
KMVN	Kumaon Mandal Vikas Nigam
Leq	Sound Level
MoEFCC	Ministry of Environment & Forests, and Climate Change
NAAQM	National Ambient Air Quality Monitoring
NA	Not Applicable
NOC	No-Objection Certificate
O&M	Operation and Maintenance
PIU	Project Implementation Unit
PMU	Project Management Unit
PTC	Police Training Centre
PWD	Public Works Department
REA	Rapid Environmental Assessment
RoW	Right of Way
RSPM	Respirable Suspended Particulate Matter
RP	Resettlement Plan
SAR	Sub-Project Appraisal Report
SEIAA	State Environmental Impact Assessment Authority
SDMA	State Disaster Management Authority
SPCB	State Pollution Control Board
SPM	Suspended Particulate Matter
TOLF	Touch Down and Lift Off
UCADA	Uttarakhand Civil Aviation Development Authority
UEAP	Uttarakhand Emergency Assistance Project
UEPPCB	Uttarakhand Environmental Protection and Pollution Control Board
UJS	Uttarakhand Jal Sanasthan

WEIGHTS AND MEASURES

Cm	-	centimeter
Crone	-	100 lakhs = 10,000,000
Lakh	-	100 thousand = 100,000
Km	-	Kilometer
Kph	-	Kilometer per hour
Lpd	-	liters per day
M	-	Meter
mg/l	-	milligrams per liter
Mm	-	Millimeter
MSL	-	Mean sea level
μ	-	10^{-6} meter
$\mu\text{g}/\text{m}^3$	-	micrograms per cubic meter
$\mu\text{S}/\text{cm}$	-	micro Siemens per centimeter
NTU	-	Nephalo turbidity unit
Ppm	-	parts per million

NOTE(S)

In this report, "\$" refers to US dollars.
"INR" and "₹" refer to Indian rupees

TABLE OF CONTENTS

	EXECUTIVE SUMMARY	1-3
I	INTRODUCTION	4-6
	A. Project Background/Rationale	4
	B. Uttarakhand Emergency Assistance Project (UEAP)	4
	C. Purpose of the Environmental Assessment	5
	D. Extent of IEE	5
	E. Contents of IEE	5
	F. Methodology	6
II	POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK	7-11
III	DESCRIPTION OF THE PROJECT	12-19
	A. Project Location	12
	B. Proposed Category of the Project	14
	C. Background of the Proposed Sub-Projects	14
	D. Project Implementation Schedule	17
	E. Technical Specification	17
IV	DESCRIPTION OF THE ENVIRONMENT	20-46
	A. Physical Environment	20
	1. Geography	20
	2. Geology	22
	3. Physiography	22
	B. Pedology	22
	C. Climate and Meteorology	23
	D. Ambient Air Quality and Noise Level	25
	E. Hydrology	26
	1. Water Drainage	26
	2. Water Quality	27
	F. Mineral Resources	27
	G. Seismology	29
	H. Ecology	30
	1. Forests	30
	2. Agriculture	33
	3. Fishery	36
	4. Biodiversity and Protected Areas	36
	5. Biosphere Reserves	39
	I. Socio-Economic Profile	41
	1. Social and Cultural Development	41
	2. Land Use Pattern	41
	J. Health	42
	K. Literacy	43
	L. Cultural and Archaeological Resources	43
	M. Economic Development	44
	1. Transportation and Communication	44
	2. Industrial Development	45
	N. Energy and Electric Power Potential	46

	O. Aesthetic and Tourism	46
V	ANTICIPATED ENVIRONMENTAL IMPACTS & MITIGATION MEASURES	47-48
	A. Land Acquisition and Resettlement	47
	B. Environmental Impacts	47
	C. Cumulative Environmental Impact Assessment	48
VI	INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION	49-51
	A. Public Participation during the Preparation of IEE Report	49
	B. Future Consultations and Disclosure	50
	C. Consultation during Detailed Design	50
	D. Consultation during Construction	51
	E. Project Disclosures	51
VII	ENVIRONMENTAL MANAGEMENT PLAN AND GRIEVANCE REDRESS MECHANISM	52-78
	A. Institutional Arrangement	52
	1. Executing Agency (EA): SDMA or PMU (UEAP: ADB)	52
	2. Implementation Agency (EA): SDMA or PIU (UEAP: ADB)	53
	3. The Engineer (DSC)	53
	4. Environmental Expert of Engineering (DSC)	53
	5. Civil Work Contractor	53
	B. Environment Management Plan (EMP)	56
	C. Environmental Monitoring Programme	60
	D. Environmental Budget	62
	E. Environmental Monitoring and Reporting Process	64
	F. Performance Indicators	76
	G. Grievance Redress Mechanism	77
VIII	CONCLUSION AND RECOMMENDATION	79

LIST OF TABLES

Table Nos.	Description	Page No.
Table II-1	Applicable Environmental National and State Requirements for UEAP (ADB)	8
Table III-1	List of 8 MPH cum Rescue Centres to be constructed under the sub-project (UEAP: ADB)	13
Table III-2	Categorization of MPH cum Rescue Centres	14
Table IV-1	Locations for Generation of Baseline Data for Soil Quality	23
Table IV-2	Locations for Generation of Baseline Data for Ambient Air Quality (AAQ) and Noise Levels	25
Table IV-3	Locations for Generation of Baseline Data for Water Quality	27
Table IV-4	Availability of Important Minerals (million tonnes)	28
Table IV-5	District-wise Forest Cover, Uttarakhand	31
Table IV-6	Predominant Top-canopy Species according to Altitude (m. asl)	33
Table IV-7	Area under Principal Crops and Productivity in Uttarakhand	34
Table IV-8	Ecological Sub-Regions and Altitude-wise major Crops	35
Table IV-9	Mode of Irrigation and Drainage System in Uttarakhand	35
Table IV-10	Wildlife in Uttarakhand	36
Table IV-11	National Parks and Wildlife Sanctuaries in Uttarakhand	37
Table IV-12	List of major Flora of Uttarakhand	38
Table IV-13	List of major Fauna of Uttarakhand	39
Table IV-14	Land Utilisation in Uttarakhand	41
Table IV-15	Demographic Socio-economic and Health Profile of Uttarakhand State as compared to India Figure	42
Table IV-16	Health Infrastructure in Uttarakhand State	42
Table VII-1	Transportation in Uttarakhand State	45
Table VII-1	Environmental Monitoring Plan	60
Table VII-2	EMMP Cost for Construction and Upgradation of 8 MPH cum Rescue Centres	63
Table VII-3	Standardized EMMP to Guide the Contractor in mitigating Environmental Impacts	65
Table VII-4	Performance Indicators of EMMP	76

LIST OF FIGURES

Figure Nos.	Description	Page No.
Figure – 1	Map Showing Locations for Proposed MPH cum rescue centres	12
Figure – 2	Location of Districts in Uttarakhand	20
Figure – 3	Seismic Zones of India	29
Figure – 4	Forest Cover of Uttarakhand (As per India State of Forest Report, 2011)	30
Figure – 5	Forest Cover of Uttarakhand	31

LIST OF APPENDICES

Appendix	Description		
Appendix – A	Environment Categorization		
Appendix – B	Rapid Environmental Assessment (REA: Checklist 2D General)		
Appendix – C	UCADA Advertisement		
Appendix – D	Leaflet for Public Information		
Appendix – E	Attendance of Public Consultation		
Appendix – F	Some Photographs of Public Consultation		
Appendix – G	No-objection Certificates (NOCs)		

EXECUTIVE SUMMARY

1. Uttarakhand lies in the northern part of India amidst the magnificent Himalayas and dense forests. The State is bordering Himachal Pradesh in the north-west and Uttar Pradesh in the South and shares International borders with Nepal and China. The State is comprised of 13 districts divided into two regions and also called administrative divisions; the Kumaon and Garhwal. The region is traditionally referred to as Uttarakhand in Hindu scriptures and old literature, a term which derives from the Sanskrit for Northern Country or Section. Uttarakhand, by virtue of its geographical setting, is vulnerable to minor ecological changes. Hence, any activity disapproved by mountain ecosystem triggers a disaster. We cannot stop disaster to happen but can certainly take some steps to reduce its effects. Disasters are synonymous to damage of property, life and psyche of the people. If disasters cannot be averted, then reduction of losses of any type, caused by disaster becomes a focal point of the policy for disaster. So far, in the recent June 2013 Uttarakhand has experienced major natural calamities in five main districts Rudraprayag (especially Kedarnath), Chamoli, Uttarkashi, Bageshwar and Pithoragarh (Dharchula).
2. Being part the Himalayan region, Uttarakhand is a disaster prone state. Landslides, forest fires, cloudbursts and flash-floods are seasonal in nature and this strike at a certain period of the year with high frequency. Natural disasters in the mountains are the most devastating and are unpredictable. Natural disaster of June 2013 resulted in huge damage of life, roads, tourism assets/infrastructure, rural & urban infrastructure in the state of Uttarakhand. This event also recorded a glacial lake burst/overflow related flash flood at Kedarnath causing a great number of loss of lives and severe damage of property enroute.
3. The Government of Uttarakhand (GoU) launched a massive emergency rescue and evacuation operation with assistance from the Indian Army, Indian Air Force (IAF), Indo-Tibetan Border Police (ITBP), the National Disaster Response Force (NDRF) and the local Police evacuating more than 110,000 people from these flood affected areas. The need to immediately start the recovery and reconstruction work, especially in the most affected areas prompted the need for a rapid assessment to understand the nature of damages post-disaster. The Uttarakhand Government is committed to ensure the safety and well-being of its people and recognizes the necessity to continuously improve disaster risk reduction and management within the State.
4. Natural Disaster of June, 2013 has resulted in huge loss of lives of tourists/residents and severe damage to infrastructural facilities in the region, highlighting the requirement to strengthen the disaster preparedness by creating proper rescue/relief/evacuation mechanism through aerial route in such eventualities in the difficult Himalayan terrain. Presently 8 sub-projects are being undertaken under MPH cum Rescue Centre-Package I. The No-Objection Certificates (NOCs) for all 8 sub-projects (MPH cum Rescue Centres) have been obtained from the concerned authorities (District Magistrates). These 8 sub-project locations exist in 4 Districts of Uttarakhand State. All four districts are under Garhwal Division i.e. Dehradun, Pauri garhwal, Rudraprayag and Uttarkashi.
5. Out of the 8 sub-projects in UEAP, five sub-projects to be developed as MPH-5 category (area required 110 m²), two sub-projects as MPH-10 category (area required 196 m²) and remaining one sub-project to be developed as MPH 20 category, which need atleast 272 m² area for construction.
6. Consistent with the Environmental Assessment and Review Framework, the proposed sub-project were screened using ADB rapid environmental assessment (REA) checklist. The environmental screening revealed that no protected or sensitive areas were traversed. All impacts are site specific; few are irreversible and can be readily mitigated

supporting an environmental "Category B" classification. The brief description of subproject sites are as follows:

Tyuni: Tyuni is a small habitation of Uttarakhand (UK) bordering with Himachal (HP) near Rohru and Shillai (Sirmour). MPH 5 is proposed.

Srinagar: Srinagar is one of the biggest townships of the district and largest city in Garhwal hills. It is located at a junction of roads from Kotdwar, Rishikesh, Tehri Garhwal, Kedarnath & Badrinath and it serve as main halting point for the pilgrims of "Char Dham Yatra". MPH 20 is proposed.

Kotdwar: Kotdwar is a town in the Pauri Garhwal district of Uttarakhand. It is situated in the south-western part of state and is one of the main entrance points in the state of Uttarakhand. It is famous for its Kanva Ashram and Sidhbalī temples and is one of the gateways to famous Jim Corbett National Park. MPH 5 is proposed.

Lansdwone: Lansdowne is unlike other hill stations as it is well connected with motorable roads but remote in its own way. It is situated at an altitude of 1,706 M asl surrounded with thick oak and blue pine forests in the Pauri Garhwal district of Uttarakhand state. MPH 5 is proposed.

Augustymuni: Augustmuni is famous for the temple of Maharsi Puri Ranjan nad by the name of religious guru Agastya it is called Agastyamuni. This area is near a small settlement of Silli falls under hill district of Rudraprayag. It is situated on the river bank of Mandakini. MPH 10 is proposed.

Ukhimath: Ukhimath is a pilgrimage site in Rudraprayag district, Uttarakhand, India. It is at an elevation of 1311 metres and at a distance of 41 km from Rudraprayag. MPH 5 is proposed.

Barkot: Barkot is a town and a Nagar Palika in Uttarkashi District in the state of Uttarakhand. MPH 10 is proposed.

Manera: Manera is located in the outskirts of Uttarkashi town, the district headquarter. MPH 5 is proposed.

7. **Air Quality.** The pristine environment and sparse population suggest that most part of the State have a very good air quality. The baseline data related to ambient air quality and noise level will be generated before commencement of civil work/construction.
8. **Seismicity.** The State constitutes one of the most active domains of the Himalayan region. Several damaging earthquakes are recorded from this region. As such, the region is classified under high seismic zones IV & V.
9. **Forest.** Uttarakhand is ranked 9th in all-India in terms of forest covered area with 24,508 km² of forest land (As per State Forest Report 2013). The district of Pauri Garhwal, Uttarkashi, Nainital, and Chamoli have the largest forest cover accounting for 50% of all the state's total. The State Govt. of Uttarakhand has declared the oak tree (*Quercus* sp.) as a *Kalpvrksha* or wish fulfilling divine tree often treated as the signature plant of the Kumaon Himalayas as numerous logos and insignias with a stylized version of the deodar inscribed on them.
10. **Sensitive Ecosystem.** The sub-projects locations are not located within or fall within any sensitive ecosystem. Neither the project component has any direct intervention or indirect interventions with sensitive ecosystem.
11. **Significant Environmental Impacts and Proposed Mitigation Measures.** No environmental impacts related to siting were identified in the environmental examination. The proposed sub-projects are not located within or adjacent to the cultural heritage sites, protected areas, wetlands, mangroves, estuarine; core as well buffer zones of the protected areas or any special area for protecting biodiversity. There are no rare, threatened, and endangered species (flora and fauna) within the sub-project sites. The potential significant environmental impacts identified and assessed are related to construction time impacts.

12. **Information Disclosure, Consultation, Participation, and Grievance and Redress Mechanism.** Wide stakeholders consultation and participation was observed during the environmental examination of UEAP by project affected communities, government institutions, and non-governmental organizations. Highlight of all consultations were documented and applicable recommended measures particularly in minimizing shifting of structures, potential conflict with migrant workers, and competing demand for local resources were incorporated in the design and the environmental management plan. This IEE report will be disclosed on ADB website pursuant to the Bank's *Public Communication Policy* and in the SDMA website.
13. **Environmental Management Plan.** The Environmental Management and Monitoring Plan (EMMP), to form part of the bidding documents, adopted the procurement package scheme and facilitate subsequent compliance monitoring by the contractor.
14. **Conclusion.** The initial environmental examination (IEE) ascertains that the sub-project is unlikely to cause any significant environmental impacts. No additional studies or need of undertaking detailed EIA is envisaged at this stage. The Executing Agency shall ensure that EMP and EMoP is included in BOQ and forms part of bid document and civil works contract. The same shall be revised if necessary during project implementation or if there is any change in the project design and with approval of ADB. The IEE is based upon the EARF, which is in consistent with the ADB's Safeguard Policy Statement (SPS) 2009. All the sub-projects are classified as Category "B" for Environment and do not require further EIA study. In the present IEE certain baseline data is not available for ambient air quality, water quality and noise level. Therefore, it is proposed that before the commencement of civil work, sampling for these parameters shall be conducted.

I. INTRODUCTION

A. Project Background/Rationale

1. Recent disaster of unprecedented floods in June, 2013 in the state of Uttarakhand, devastated many towns and villages on the banks of rivers Mandakini, Bhagirathi, Pindar, Alaknanda, Kali and Saryu. Infrastructure facilities like roads, power supply, communication, buildings, and water supply had been affected severely. Though the state government had taken up many steps to temporarily restore the facilities, it is envisaged to take up permanent measures to restore and rehabilitate the facilities.

B. Uttarakhand Emergency Assistance Project (UEAP)

2. Uttarakhand, being a tourist and pilgrimage State, attracts a large number of tourist and pilgrims. A major disaster during 15-17 June 2013 resulted in severe damages in several parts of Uttarakhand, which has a mountainous terrain and a fragile geology. Several habitations and towns have been washed away by the unprecedented flash floods and landslides, and a large number of houses, public buildings, roads, bridges, urban, rural, and tourism infrastructure, power generation and distribution facilities have been severely damaged. The impact on the affected population due to the loss of connectivity has been manifold.
3. The Natural Disaster of June 2013 has resulted in huge loss of lives of tourists/residents and severe damage to infrastructural facilities in the region, highlighting the requirement to strengthen the disaster preparedness by creating proper rescue/relief/evacuation mechanism through aerial route in such eventualities in the difficult Himalayan terrain.
4. Based on the request of India, a Joint Rapid Damage and Needs Assessment (JRDNA) was undertaken by Asian Development Bank (ADB) and the World Bank. ADB agreed to assist the Government of India (GOI) with reconstruction and rehabilitation efforts for which the Uttarakhand Emergency Assistance Project (UEAP) has been formulated as a multi-sector emergency loan in sector loan modality. The executing agency (EA) for the UEAP will be Government of Uttarakhand (GoU) and State Disaster Management Authority (SDMA). The primary implementing agencies (IAs) will be Public Works Department (PWD) for roads, bridges, urban roads, and trekking routes including eco-trails. The Department of Tourism (DoT) for tourism infrastructure, Uttarakhand Civil Aviation Development Authority (UCADA) for helipads; and Uttarakhand Jal Sansthan (UJS) for urban water supply, or any successor hereto. Some other state agencies such as Forest Department, Kumaon Manda Vikas Nigam Limited, and Garhwal Mandal Vikas Nigam Limited are likely to be entrusted with some works under UEAP under these primary IAs.
5. While the disaster affected almost all districts within the state, the main focus of the assessment was on five districts that were most affected: Bageshwar, Chamoli, Pithoragarh, Rudraprayag, and Uttarkashi. However, to strengthen the disaster preparedness capability and to restore visitor's faith/confidence in the tourism safety through provision of better connectivity and presence of rescue, relief, and evacuation mechanisms, as per the indicative list of sub-projects in PAM under "Section - II". Tourism Amenities and Helipads" and its Sub-section 1. The main theme of PIU (CA) is to "Construction of MPH cum Rescue centres" in the state of Uttarakhand. Presently under the sub project, eight MPH cum Rescue Centers have been identified in four districts of Uttarakhand under UEAP (Civil Aviation Program). These would be developed under three categories of MPH (i.e. MPH-5 – 5 nos, MPH-10 - 2 Nos. and MPH 20 – 1 No.). The nature of civil work would be construction of eight new MPH cum

Rescue Centres in four districts of Uttarakhand i.e. Dehradun, Pauri garhwal, Rudraprayag and Uttarkshi

C. Purpose of the Environmental Assessment

6. The main purpose of this IEE is to provide environmental assessment of the proposed construction of the MPH cum rescue centre. The purpose of this study is to identify the environmental issues to be considered at project planning and design stage, assesses environmental consequences due to project intervention and suggests mitigation measures to minimise the adverse environmental impacts, if any, associated with construction and operation. The key environmental impacts on natural and human environments have been assessed.
7. The Objectives of this Initial Environmental Examination (IEE) are as follows:
 - Assess the existing environmental conditions in the sub-project locations including the identification of environmentally sensitive areas and valued environmental components (VECs).
 - Assess the proposed planning and developmental activities to identify their potential impacts, evaluate the impacts, and determine their extent.
 - Assess the compliance with ADB's environmental safeguard requirements and applicable environmental laws.
 - To incorporate environmental mitigation measures in the project design and preparation of environmental management and monitoring plan (EMMP) for the project.
8. This IEE has been carried out to ensure that the potential adverse environmental impacts are appropriately addressed in line with *ADB Safeguard Policy Statement, 2009*.

D. Extent of IEE

9. IEE was conducted based on preliminary Detailed Design Report (DPR). The IEE covers all activities proposed under the project. The core zone of impact is taken as direct impact of the new construction or upgradation of the project component. IEE also covers the direct impact of the sub-project component. Assessment is carried out for all components of environment covering terrestrial and aquatic ecology, soil, water, noise and socio-economic aspects.

E. Contents of IEE

The IEE has been largely structured as per SPS, 2009, ADB's Environmental Assessment Guidelines (2003) and environmental safeguards. A Good Practice Source Book (December 2012). Following this introduction of this report contains seven more sections including (ii) Policy, Legal and Administrative Framework, (iii) Description of Project, (iv) Description of Environment, (v) Anticipated Environmental Impacts and Mitigation Measures, (vi) Information Disclosure, Consultation, and Participation, (vii) Environment Management Plan and Grievance Redress Mechanism, and (viii) Conclusion and Recommendation. This IEE is based on secondary sources of information, field reconnaissance surveys, review of legal requirements, identification of impacts and mitigation measures, impact assessment and institutional review and public consultation undertaken specifically for this study was also undertaken.

F. Methodology

10. The overall methodology for the Environmental Examination comprises the following stages:
 - (A) *Field reconnaissance survey to assess the sub-project locations simultaneously to identify the critical environmental attributes.*
 - (B) *Stakeholders Meeting and Preliminary Public Consultation to get their feedback related to sub-projects.*
 - (C) *Collection and review of readily available secondary data (informations, khasra khatoni and revenue map etc.) especially from Revenue and Forest Departments.*
 - (D) *Superimposing technical data on the design aspects over baseline status to identify the nature of potential negative impacts and suggesting feasible mitigation measures for minimization of those impacts*
 - (E) *Identification of method, implementation of suggested mitigation measures and environmental monitoring to develop an Environmental Management and Monitoring Plan (EMMP).*
 - (F) *Preparation of Environmental Safeguard Reports such as IEE, EIA, EMP and Recommended Mitigation Measures as per project need.*
11. All above mentioned tasks and sub-projects feasibility were assessed based on the Rapid Environmental Assessment (REA) Checklist (i.e. Checklist 2D General).
12. The reconnaissance survey of the sub-project locations was undertaken to determine the existing status of the various 'Valued Environmental Components' (VECs) of the area. The baseline data was collected from primary as well as secondary sources. The different environmental components such as physical, environmental and ecological resources such as topography, geology, hydrology, climate and land use, flora and fauna were studied in detail to establish the baseline conditions. The objectives of reconnaissance survey are described below.
 - *To provide information about general baseline environmental setting of the project area with respect to the physical environment and ecological resources in the project specific location..*
 - *To identify and collect various informations on potential impacts of sub-projects and the characteristics of the impacts in terms of pre-construction, construction and operation phases of the project.*
 - *To determine strategy for formulation of EMMP.*
 - *To determine and use of sustainable methods and appropriate technologies for minimization of environmental as well as social impacts as far as possible.*

II. POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

13. The legal framework of the country consists of several acts, notifications, rules and regulations to protect environment and wildlife. In 1976, the 42nd Constitutional Amendment created Article 48A and 51A, placing an obligation on every citizen of the country to attempt to conserve the environment.
14. Specifically for the Uttarakhand Emergency Assistance Project (UEAP: ADB), the following environmental laws and regulations are applicable (*Table II - 1*).

Table II-1: Applicable Environmental National and State Requirements for UEAP (ADB)

Sl.No	Clearance	Acts/Rules/Notifications/Guidelines and Application to Sub-projects	Concerned Agency	Applicable to Contract	Responsibility	Status of Compliance
A. Pre-construction Stage						
1	Environmental Clearance	E A Notification, 2006 amended till date, promulgated under Environment (Protection) Act 1986 The Notification and its latest amendment entails requirement of prior environmental clearance to the projects listed in schedule of this notification.	State Environmental Impact Assessment Authority (SEIAA). If not constituted then MoEF.	No	No	Not required
2	Forest Clearance for felling of trees and acquisition of forest land.	As per the Forest Conservation Act (1980): (i) If the forest land exceeds 20 ha then prior permission of Central Government is required; (ii) If the forest land is between 5-20 ha, then permission from the Regional Office of Chief Conservator is required; (iii) If the forest land is below or equal to 5 ha land, the State Government may give permission. (iv) If the construction area is more than 40% forest, permission to undertake any work is needed from the Central Government, irrespective of the size of the area. Besides these conditions: (v) Uttaranchal Van- Panchayat Rules (2005)	District Level Committee constituted by the State Govt. Van-Panchayat is a local level body, which is advised by the Forest Department. The NOC in this regard is issued by the Concerned Vanpanchayat Sarpanch, Chairman (Municipality) and District Magistrate.	No	PIU (Civil Aviation) PIU (Civil Aviation)	Not Required Not Required

Sl.No	Clearances	Acts/Rules/Notifications/Guidelines and Application to Sub-projects	Concerned Agency	Applicable to Contract	Responsibility	Status of Compliance
3	Permission for Working in Protected Area	The Indian Wildlife (Protection) Act, 1972, amended 1983, The Wild Life (Protection) Amendment Act, 2002. This Act provides guidelines for protection of wild animals, birds and plants etc. and for matters connected therewith or ancillary or incidental thereto. It also states the norms for hunting of wild animals, prohibition of picking, uprooting etc. of specified plants. The Act deals with the declaration of area as Sanctuary, National Park, and closed area and also states the restriction of entries in the sanctuary.	Protected Area Authority and Wildlife Board	No	No	Not Required
4.	Permission for Working in Protected Area	The Ancient Monuments and Archaeological Sites and Remains Act, 1968, and the rules, 1956 provide guidance for carrying out activities, including conservation, construction and reuse in and around the protected monuments.	Archaeological Survey of India	No	PIU (CM Aviation)	Not required
5.	Bhagirathi Eco-sensitive Zone Notification	The maintenance of Environmental flow and ecology of the River Bhagirathi from Gaumukh to Uttarkashi with total area of 4179.59 km ² covering the entire watershed of about 100 km stretch of the river Bhagirathi shall be declared as Eco-sensitive Zone from ecological and environment point of view.	Ministry of Environment, Forests and Climate Change	No	No	Not Required
6.	Doon Valley Notification	The Central Government hereby imposes restrictions on the following activities in Doon Valley, bounded on the North by Mussoorie ridge, in the North-East by Lesser Himalayan range, on the South-West by Shivalik ranges, river Ganga in the South-East and river Yamuna in the North-West, except those activities which are permitted by the Central Government for examining the environmental impacts.	Ministry of Environment, Forests and Climate Change	No	No	Not Required
B. Construction Stage						

Sl.No	Clearances	Acts/Rules/Notifications/Guidelines and Application to Sub-projects	Concerned Agency	Applicable to Contract	Responsibility	Status of Compliance
1.	Discharge of waste water	The Water (Prevention and Control of Pollution) Act 1974 and The Water (Prevention and Control of Pollution) Rules 1975. The Act and Rules outlines the activities which are prohibited on account of their potential to cause water pollution. Pollution from various sources needs to be controlled as per this Act and Rules.	Uttarakhand Environmental Protection and Pollution Control Board, Dehradun	Yes	Civil Work Contractor	Contractor will obtain prior approval (If required)
2	Permission for Sand Mining from river bed	Mines and Minerals (Regulation and Development) Act, 1957 as amended in 1972.	River Board Authorities/ Department of Mining Govt. of Uttarakhand	Yes	Civil Work Contractor	Contractor will obtain prior approval from the concerned authority.
3	Consents to establish & operate Hot and Batch Mixing Plants & Stone Crushers.	Air (Prevention and Control of Pollution) Act 1981	Uttarakhand Environmental Protection and Pollution Control Board - Dehradun	Yes	Civil Work Contractor	
4	Authorization for Disposal of Hazardous Waste	Hazardous Waste (Management and Handling) Rules 1989 as amended 2003	Uttarakhand Environmental Protection and Pollution Control Board - Dehradun	No	Civil Work Contractor	Not required
6	Consent for Disposal of Sewage from Labour camps	Water (Prevention and Control of Pollution) Act 1974	Uttarakhand Environmental Protection and Pollution Control Board - Dehradun	No	Civil Work Contractor	Not required
6	Use of Fly ash within 100 kms around Thermal Power plants	Fly Ash Notification, 1993 & its amendment in 17 August 2003.	MoEF	No	Civil Work Contractor	Not required
7	Polluting Under Control Certificate	Central Motor and Vehicle Act, 1988	Department of Transport, Govt. of Uttarakhand	Yes	Civil Work Contractor	Contractor will obtain prior approval before start of Construction Work.

Sl.No	Clearances	Acts/Rules/Notifications/Guidelines and Application to Sub-projects	Concerned Agency	Applicable to Contract	Responsibility	Status of Compliance
8	Installation of Generators	The Air (Prev. & Con. of Pollution) Act, 1980	Uttarakhand Environment Protection and Pollution Control Board - Dehradun	Yes	Civil Work Contractor	
9	Employing Labour/workers	The Building and Other Construction Workers (Regulation of Employment and Conditions of Service) Act, 1966,	District Labour Commissioner	Yes	Civil Work Contractor	Contractor will obtain the Labour licence before commencement of work
10	Permission for extraction of boulder and sand from river beds	Mines & Minerals (Regulation and Development) Act, 1957 and its amended in 1972	Department of Mines and Geology, Government of Uttarakhand	No	Civil Work Contractor	Not required
11	License for Storing Diesel and other explosives	Petroleum Rules, 2002. Hazardous Waste (Management and Handling) Rules 1989.	Commissioner of Explosives and Uttarakhand Environmental Protection and Pollution Control Board, Dehradun	No	Civil Work Contractor	Not required
C. Implementation Stage						
1	Consent to Establish & Consent to Operate for Installation of Generators	The Air (Prev. & Con. of Pollution) Act, 1980	Uttarakhand Environment Protection and Pollution Control Board, Dehradun	Yes	PIU (Civil Aviation)	

III. DESCRIPTION OF THE PROJECT

A. Project Location

15. The list of eight MPH Cum Rescue Centers identified on priority basis under the sub project are given in **Table III-1&2** and **Figure 1** for the location of these sites. The locations for these eight MPH Cum Rescue Centers for construction have been identified at helipad sites in these areas because the effect of climatic mishaps in this part of Uttarakhand is maximum and also some of the most frequented tourist destinations for adventure and pilgrimage.

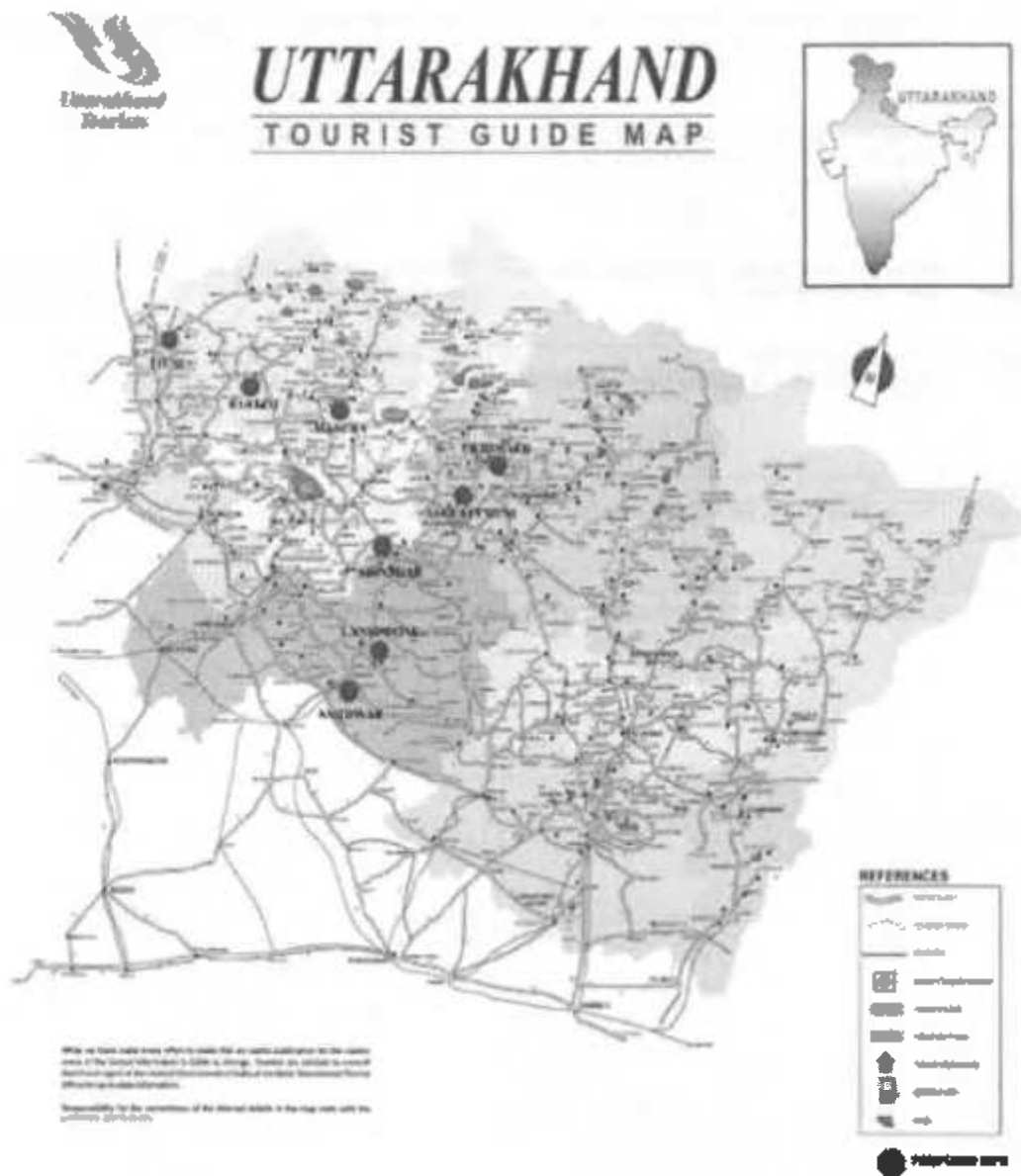


Figure 1: Map Showing Locations for Proposed MPH

Table III-1: List of MPH cum Rescue Centres to be constructed under Package I (UEAP: ADB)

Sl. No.	Sub-Project Location	District	Category Proposed	Geographical Location	Helipad /Heliport category	Status of Land	Status of NOC	Diversion of Forest	Status of Environmental & Social (R&R) Issues
1.	Tyuri (Branal Basti)	Dehradun	MPH 5	30° 58' 12"N 77° 50' 42" E	H3→H4	Government Land	NOC obtained	No	No
2.	Srinagar (ITI Ground)	Pauri Garhwal	MPH 20	30°13'13"N 78°46'1"E	H2	Institution Land	NOC obtained	No	No
3.	Kotdwar	Pauri Garhwal	MPH 5	29°44'29.14"N 78°28'00.33"E	H4	Government Land	NOC obtained	No	No
4.	Lansdowne	Pauri Garhwal	MPH 5	29°51'47"N 78°30'55"E	H4	Government Land	NOC obtained	No	No
5.	Augustymuni	Rudraprayag	MPH 10	30°23'22"N 79°01'11"E	H2 →H4	Government Land	NOC obtained	No	No
6.	Ukhimath (GIC)	Rudraprayag	MPH 5	30°30'59.53"N 78°5'39.46"E	H4*	Institution Land	NOC obtained	No	No
7.	Barkot (Civil Aviation)	Uttarkashi	MPH10	30°48'45"N 78°12'12"E	H2	Civil Aviation Land	NOC obtained	No	No
8.	Manera (Sports stadium)	Uttarkashi	MPH 5	30°43'57.18"N 78°24'40.38"E	H2→H4	Sports Department	NOC obtained	No	No
	Total	4	MPH-5=5; MPH-10=2; MPH-20=1			-	8	-	-

17. The disaster preparedness area coverage is for pilgrim destinations of parts of "Char Dham Circuit," viz. Chamoli district being home to Badrinath, while Rudraprayag district is home to Kedarnath, and some other tourism destinations and settlements; as well as tourism destinations and settlements in the other 9 districts of the Uttarakhand that needs to be supported with enhanced disaster preparedness measures.

Table III-2: Categorization of MPH Cum Rescue Centres

No.	Category	Capacity	Plinth Area (in sqm)	No. of proposed
1	MPH 20	1 Pilot Room + Lounge +Kitchen + Multipurpose Hall 20 Person + aviation control room + medical facilities + store + toilets	272 sqm	1
2	MPH 10	1 Pilot Room + Lounge +Kitchen + Multipurpose Hall 10 Person + aviation control room + medical facilities + store + toilets	196 sqm	2
3	MPH 5	1 Pilot Room + Lounge cum Multipurpose Hall for 5 persons +Kitchen + aviation control room + medical facilities + store + toilets	110 sqm	5

B. Proposed Category of the Project

18. Pursuant to the requirements of the ADB Safeguard Policy Statement (2009) proposed "Construction of MPH Cum Rescue Centres" was screened to identify significance of potential impacts, determine the environmentally sensitive component, establish the needed level of assessment, and prescribe the information disclosure and consultations requirement to be complied by the Uttarakhand Civil Aviation Development Authority (UCADA). Consistent with the Environmental Assessment and Review Framework (EARF), the sub-project was screened using the ADB rapid environmental assessment (REA) checklist.
19. The environmental screening revealed that no protected or sensitive areas were traversed. There are no rare, threatened, and endangered species (flora and fauna) within the sub-project corridor of impact. All impacts are site specific, and all impacts can be readily mitigated supporting a category "B" classification.

C. Background of the Proposed Sub-Projects

i. Tyuni (District – Dehradun)

20. Tyuni is a small habitation of Uttarakhand (UK) bordering with Himachal (HP) near Rohru and Shillal (Sirmour).
21. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
22. Scope of proposed MPH cum Rescue Centre (MPH-5 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the

building ready to use and thus no impact on water quality of the River Tons is anticipated due to construction activities.

ii. Srinagar (District – Pauri Garhwal)

23. Srinagar, once the capital of the Garhwal Kinds and an important center for Art and Architecture along with Trans Himalayan Trades is situated in a sprawling valley on the bank of Alaknanda River at a distance of 29 Km from district headquarter Pauri. It has an average elevation of 560 M asl. It is one of the biggest townships of the district and largest city in Garhwal hills. It is located at a junction of roads from Kotdwar, Rishikesh, Tehri Garhwal, Kedarnath & Badrinath and it serves as main halting point for the pilgrims of "Char Dham Yatra".
24. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
25. Scope of proposed MPH cum Rescue Centre (MPH-20 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no impact on water quality of the River Alaknanda is anticipated due to construction activities. The site is located about 800 meters from River Alaknanda.

iii. Kotdwar (District – Pauri Garhwal)

26. Kotdwar is a town in the Pauri Garhwal district of Uttarakhand. It is situated in the south-western part of state and is one of the main entrance points in the state of Uttarakhand. It is famous for its Kanva Ashram and Sidhbalī temples and is one of the gateway to famous Jim Corbett National Park.
27. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
28. Scope of proposed MPH cum Rescue Centre (MPH-5 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no impact on water quality of the River Nayar is anticipated due to construction activities.

iv. Lansdowne (District – Pauri Garhwal)

29. Originally known as *Kaludanda* after Kalu (Black) and Danda (Hill) in Garhwali, Lansdowne was founded and named after then Viceroy of India (1888-1894), Lord Lansdowne in 1887. Lansdowne was developed by the British for catering for the Recruits Training center of the Garhwal Rifles. Nowadays, the famous Garhwal Rifles of the Indian Army has its command office here. Lansdowne is unlike other hill stations as it is well connected with motorable roads but remote in its own way. It is situated at an altitude of 1,706 M asl surrounded with thick oak and blue pine forests in the Pauri Garhwal district of Uttarakhand state.

30. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
31. Scope of proposed MPH cum Rescue Centre (MPH-5 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no adverse impact is anticipated due to construction activities.

v. Augustmuni (District – Rudraprayag)

32. Augustmuni is famous for the temple of Maharsi Pria Ranjan and by the name of religious guru Agastyar it is called Agastyamuni. This area is near a small settlement of Sili falls under hill district of Rudraprayag. It is situated on the river bank of Mandakini.
33. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
34. Scope of proposed MPH cum Rescue Centre (MPH-10 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no impact on water quality of the River Mandakini is anticipated due to construction activities.

vi. Ukhmath (District – Rudraprayag)

35. Ukhmath is a pilgrimage site in Rudraprayag district, Uttarakhand, India. It is at an elevation of 1311 metres and at a distance of 41 km from Rudraprayag. During the winters, the idols from Kedarnath temple, and Madhyamaheshwar are brought to Ukhmath and worshipped there for six months. Ukhmath can be used as center destination for visiting different places located nearby, i.e. Madhmaheshwar (Second kedar), Tungnath ji (Third kedar) and Deoria Tal (natural fresh water lake) and many other picturesque places. Ukhmath has many other ancient temples dedicated to several Gods and Goddesses such as Usha, Shilva, Aniruddha, Parvati and Mandhata. Situated on the road connecting Guptkashi with Gopeshwar, the holy town is mainly inhabited by the head priests of Kedarnath known as Rawals.
36. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
37. Scope of proposed MPH cum Rescue Centre (MPH-5 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no adverse impact is anticipated due to construction activities.

vii. Barkot (District – Uttarkashi)

38. Barkot is a town and a Nagar Palika in Uttarkashi District in the state of Uttarakhand. It is located on the banks of the Yamuna river. Barkot is 126 km from the capital of

Uttarakhand & 82 km far from District headquarters on the way of Yamunotri and Gangotri Dham. Barkot is located at 30.82°N 78.20°E and has an average elevation of 1,220 metres.

39. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
40. Scope of proposed MPH cum Rescue Centre (MPH-10 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no impact on water quality of the River Saryu is anticipated due to construction activities. The proposed site for construction of MPH cum Rescue Centre is approximately 225 meters from the bank of river Yamuna.

viii. Manera (District – Uttarkashi)

41. Manera is located in the outskirts of Uttarkashi town, the district headquarter. It is situated on the banks of river Bhagirathi at an altitude of 1352 m above sea level. Uttarkashi is home to a number of ashrams and temples and also to the Nehru Institute of Mountaineering. The name of the town reflects its similarity to and location (as north of) the city of Kashi (Varanasi). Similar to Varanasi, town of Uttarkashi is situated on the banks of River Bhagirathi, a major tributary to River Ganges, lies next to a hill named Varun Parvat, on confluence of two rivers Varuna and Asi, has a ghat called Manikarnika Ghat and has a temple dedicated to Shiva (Kashi Vishwanath Temple) in the center of the town.
42. The proposed land is not located within or adjacent to the core and buffer zones of any national park, wildlife sanctuary, biosphere reserve and other critically environmental habitats such as wetlands, eco-sensitive zone (ESZ) etc.
43. The proposed site for construction of helipad is approx. 250-300 meters from the bank of river Bhagirathi. Scope of proposed MPH cum Rescue Centre (MPH-5 category) is confined to construction of prefabricated structure of MPH over RCC foundations, trusses and roofing works, interior & external wall finishing works, flooring and ceiling works, electrical and plumbing works, loose furniture and misc. items complete in all respect to make the building ready to use and thus no impact on water quality of the River Bhagirathi is anticipated due to construction activities.

D. Project Implementation Schedule

44. The implementation period for the UEAP is upto March 2017.

E. Technical Specification

45. The following points are considered for designing of these MPHs in brief at the SAR level,

a) Area Requirement:

No.	Category	Capacity	Plinth Area (In sqm)
1	MPH 20	1 Pilot Room + Lounge +Kitchen + Multipurpose Hall 20 Person + aviation control room + medical facilities + store + toilets	272 sqm

No.	Category	Capacity	Plinth Area (in sqm)
2	MPH 10	1 Pilot Room + Lounge +Kitchen + Multipurpose Hall 10 Person - aviation control room + medical facilities + store + toilets	196 sqm
3	MPH 5	1 Pilot Room + Lounge cum Multipurpose Hall for 5 persons +Kitchen + aviation control room + medical facilities + store + toilets	110 sqm

b) Foundation:

The Foundation for the entire structure shall be raft / isolated footing considering the load of the super-structure, seismic zone, wind velocity and snow load.

c) Prefabricated Steel works:

The Steel frame shall be of MS Built-up Sections and complete PEB Structure (incl. wall frames, Roof frames), internal and external walls made out of cement board filled with insulation, Galvalume profiled roofing sheets supported over purlins in required slope as per design complete with end drain channels and rain water pipes as per drawings and specifications.

d) Masonary works

230/115 mm thick Brick work is to be done using modular bricks & cement mortar as binding material.

e) UPVC Door-Window works

Factory made UPVC white colour casement/sliding window / door, made of extruded profiles. Profiles of frames and sash will be mitered cut and fusion welded at all corners, including drilling of holes for fixing hardware and drainage of water etc., making arrangement for fixing of hardware, EPDM gasket, 1.2 ± 0.2 mm thick galvanized steel profile to be inserted in required profile, frame will be fixed to the wall with 8 mm x 100 mm long fasteners.

f) PVC interior and exterior panelling works

External & internal wall cladding system (Exterior grade compact panel for exterior facia) made out of natural fibre with thermosetting resins under high temperature & pressure & UV coated for 10+ year guarantee, fixed onto existing walls/cement board panels with necessary fittings, fixtures, aluminium/UPVC profiles in design with grooves etc, complete with all fittings and hardware's. Wooden look alike design.

g) Electrical Works

Complete electrical works including point wiring, circuit wiring, light fixtures, switch-sockets, power points, MCB boards, main panel complete including earthing etc in all respects.

h) Plumbing and Sanitation Works

Plumbing Works for toilets, bathrooms & kitchen complete in all respect (water supply in washbasins, wcs, urinals, bath areas, waste water from urinals, washbasins, sewage from w.c., hot - cold water lines & liquid soap container etc complete including floor traps, wall traps, external gully traps, manholes etc. Including water storage tank & soak pit.

l) Loose Furniture and misc. Items

Bed, Sofa, Table chair, TV along with other basic necessity items to be provided as per the size of MPHs.



IV. DESCRIPTION OF THE ENVIRONMENT

A. Physical Environment

46. This section presents a brief description of the existing environment including its physical, ecological resources, and socio-economic development of the Sub-projects. Broad aspects on various environmental parameters such as geography, geology, physiography, climate, meteorology, seismology, ecology, socio-cultural and economic developmental parameters on one hand and information to be compiled from relevant government agencies like the Forest Department, Wildlife Department, State Environment Protection, and Pollution Control Board and Meteorological Department etc.

1. Geography

47. Uttarakhand lies in the northern part of India amidst the magnificent Himalayas and dense forests. The State is bordering Himachal Pradesh in the north-west and Uttar Pradesh in the South and shares international borders with Nepal and China. The State is comprised of 13 districts, these are; Pithoragarh, Almora, Nainital, Bageshwar, Champawat, Uttarkashi, Udham Singh Nagar, Chamoli, Dehradun, Pauri, Tehri Garhwal, Rudrapur, and Haridwar. Geographically, the state lies in the northern Himalayas between 28°53'24" to 31°27'50" North latitude and 77°34'27" to 81°02'22" East longitude. The State has geographical area of 53,483 Km² and a population of about 1.01 crore as per census 2011.



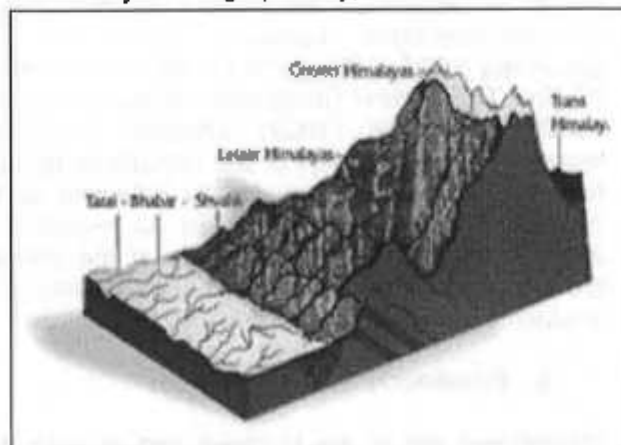
Figure 2: Location of Districts in Uttarakhand

48. Uttarakhand is divided into two regions and also called administrative divisions, basically following terrains: the Kumaon and Garhwal. The Kumaon division located southeast of the state and composed of Almora, Bageshwar, Champawat, Nainital, Pithoragarh, and Udham Singh Nagar districts. The Kumaon region is part of the vast Himalayan track and the sub-mountains of Terai and Bhabhar. The region is drained by Gori, Dhaulti, and Kali from the Tibetan mountains, and Pindari and Kaliganga which ultimately joins Alaknanda River. The Garhwal division is composed of Chamoli, Uttarkashi, Rudrapur, Tehri Garhwal, Pauri, Dehradun, and Haridwar districts and is entirely on rugged mountain ranges dissected by valley, and deep gorges. The Alaknanda River, the main source of the Ganges, traces its headwaters in this region.

49. The State is part of the Western Himalaya. Geographically, the Kumaon zone of the Western Himalaya can be divided into four zones viz.

- (A) Tarai-Bhabar-Shivalik (Sub-Himalayas)
- (B) Lesser-Himalayas
- (C) Greater-Himalayas
- (D) Trans-Himalaya (Tethys)

South of Lesser Himalayas, it is the outermost zone overlooking the foot-hills and the plains. The altitude ranging from 750-1,200 metres, the Shivaliks are the foot-hills just above the Bhabar and Tarai, once famous for the swamps and insalubrious climate, inhabited by Tribal people only, now reclaimed and developed into a fertile land, supporting a large population. While the northern zone is composed of gneisses and granites, this has a great complexity of structure, having the most favorable climatic condition for human habitation. The elevation varying from 1,000 metres to 3,500 metres from low lying river valleys to peaks close to the Great Himalayas, the Lesser Himalayas, with moderately steep slopes, consists of many fertile and flat river valleys.



50. The sub-projects fall within this zone, which is the most populated zone. This region is watered by the rivers Alaknanda, Pinder, Kosi, Gomti, Saryu, Ramganga, etc. The banks of these rivers locally called as 'seras' are highly fertile. The major Lesser Himalayan settlements are Almora, Bageshwar, Chamoli, Champawat, Rudrapur, Pauri, Tehri, Haldwani etc. are situated in this region. The cross profiles of the fluvial valleys show convex form with steep valley sides, interlocking spurs descending towards the main channel, hanging valleys, water falls and rapids and terraced agricultural fields on the gentle slopes on the valley sides. The clustering of villages is confined mainly on the gentle slopes of the ridges on the fluvial terraces.

51. The northern most zone consisting of perpetually snow-covered ranges between 3,500 to 4,800 metres, although the snow-line rises to 5,400 metres, during summers at some places. The zone contains a number of glaciers, Pindari, Milam, Nandakot, Kafni, Untadhura, Gori etc. which originate to a number of snowfed rivers like Alaknanda, Bhagirathi, Pinder, Gori Ganga etc. The Dharamganga and Saryu are major tributaries of the Kali river. Which separates Kumaon from Nepal in the extreme north-east.

2. Geology

52. According to Gansser (1964), the Himalayas may be sub-divided into five geographical divisions from west to east. In their longitudinal structure, the Himalayas are divided (from north to south) by a series of parallel tectonic zones. The 'Sub' or 'Outer-Himalayas' forming the foot-hill zone are delimited in the south by the large fans of Ganges alluvial deposits, whereas the northern edge is a clearly outlined tectonic feature—the Main Boundary Fault—genetically linked with Miocene metamorphism in the Himalayas.
53. The Lesser Himalayas are composed of tectonically compressed blocks of Paleozoic and Mesozoic crystallines, metamorphics, and sedimentary rocks. The Main Central Thrust is a major tectonic feature of the Himalayas and has brought the crystalline rocks of the Higher Himalayas over the younger sedimentaries.
54. The Greater/Higher Himalayas consist of a single range with an average height exceeding 6,000 m. The width of this zone, mostly composed of granites and gneisses, is 24 Km. The Central Crystallines occupy the core or the 'axis' of this range, and were considered to be Tertiary intrusive accompanying the compression movements responsible for the uplift of the Himalayas by some earlier workers. The recent view, however, is that they are mostly Paleozoic or Precambrian in age and represent a geanticline between the unfossiliferous sediments of the Lesser Himalayas to the south and a highly fossiliferous sequence of the Tethys zone in the north. The stratigraphic order in the Tethys zone is well known because of the well preserved fossils such as productus, ophiceras, and the likes.

3. Physiography

55. Uttarakhand lies in the Northern part of India amidst the magnificent Himalayas and dense forests. The state is bordering Himachal Pradesh in the north-west and Uttar Pradesh in the South and has international borders with Nepal and China. Uttarakhand consists of 13 districts viz., Pithoragarh, Almora, Nainital, Bageshwar, Champawat, Uttarkashi, Udham Singh Nagar, Chamoli, Dehradun, Pauri, Tehri Garhwal, Rudrapur and Haridwar.

B. Pedology

56. The soils are natural, dynamic, heterogeneous, non-renewable resource, which support plant and animal life. Most of the soil in Uttarakhand state is organic in nature but in some areas it content high proportion of minerals.
57. The soils developed from rocks like granite, schist, gneiss, phyllites, shales, slate etc. under cool and moist climate.
58. Very steep to steep hills and Glacio-fluvial valleys are dominantly occupied with very shallow to moderately shallow excessively drained, sandy-skeletal to loamy-skeletal, neutral to slightly acidic with low available water capacity soils. They have been classified as Lithic/Typic Cryorthents. These soils are in general under sparse vegetation.
59. The baseline data on soil quality at each proposed site for construction of MPH will be generated by the contractor before commencement of construction works. The details of the sites is given in **Table IV-1**
60. During construction the sampling locations proposed are, where the construction/restoration/repair work will be done.

Table IV-1: Locations for Generation of Baseline Data for Soil Sample

S. No.	Sub-Projects	No. of Sampling	Sampling Locations
1.	Tyuni	1	At project location
2.	Srinagar	1	At project locatio
3.	Kotdwar	1	At project locatio
4.	Lansdowne	1	At project location
5.	Augustymuni	1	At project location
6.	Ukhimath	1	At project location
7.	Barkot	1	At project location
8.	Manera	1	At project location

C. Climate and Meteorology

61. The State of Uttarakhand, with its highly varying topographical features, has shown an equally variegating climatic condition, ranging from hot and sub-humid sub-tropical in the southern tract of Bhabhar to temperate, cold alpine, and glacial climates in the northern part of the high mountains.
62. Factors such as elevation, slope, proximity of glaciers, forests, mountain peaks and ridges and direction of mountain ranges together give rise to the great variations in climatic conditions, even at the micro and local levels. These attributes determine the temperature range as well as the distribution of rainfall.
63. However, the overall climatic condition in the State is governed by the southwest monsoon. It has a sub-tropical to temperate climate, with three pronounced seasons; summer, winter, and monsoon. The hilly terrain of the Himalayan region has snow cover and is severely cold during winter with snowfall normally occurring during the months of December to March. The climatic conditions of Uttarkashi, Pauri and Dehradun are humid and cold.
64. The climate of Rudraprayag district according to Central Ground water board varies from Sub-tropical monsoon type (mild inter, hot summer) to tropical upland type (mild winter, dry winter, short warm summer). The northern, north-western, north-eastern and western part of the district is perennially under snow cover; here the climate is sub-arctic type as the area is represented by lofty Himalayan Range. Severe winter and comparatively higher rainfall are the characteristic features of the northern part. The year may be divided into four seasons viz., the cold winter season (December to February), the hot weather season (March to May), south-west monsoon season (June to September) followed by post monsoon season (October to November).
65. Larger part of the district is situated on the southern slopes of the outer Himalayas, monsoon currents can penetrate through trenched valleys, the rainfall reaches its maximal in the monsoon season that spans between June to September. Rainfall, spatially, is highly variable depending upon the altitude. In the Lesser Himalayan Zone (1000-3000 m. amsl) maximum rainfall occurs about 70 to 80% in southern half. August is the rainiest month. Rainfall rapidly decreases after September and it is the least in November. About 55 to 65% rainfall occurs in the northern half in Central Himalayan Zone. About 17% of the annual precipitation occurs in winter season. The winter precipitation is in association with the passage of the western disturbances and is mostly in the form of snowfall, particularly at higher elevations. The precipitation during the pre-monsoon month, which is about 7% of the annual total and the post-monsoon months, is frequently associated with thunder storms. In the southern part of the district at

Rudraprayag the average annual rainfall is around 1220.18 mm while in the central part at Chandrapuri the average annual rainfall is 1750.9 mm and the rainfall in the northern part at Okhimath is 1995 mm. The overall average rainfall in the district is 1485 mm.

66. Dehradun district has within its limits lofty peaks of the Outer Himalayas as well as the Dun Valley with climatic conditions nearly similar to those in the plains. The climate of the district, in general, is temperate. In the hilly regions, the summer is pleasant but in the Doon Valley, the heat is often intense. The temperature drops below freezing point not only at high altitudes but also even at places like Dehradun during the winters, when the higher peaks are under snow. The summer starts by March and lasts up to mid of June when the monsoon sets in. Generally, the month of May and early part of June is hottest with mean temperatures shooting upto 36.2°C at Dehradun and 24.8°C at Mussoorie. The maximum temperature rises to over 42°C at Dehradun while at Mussoorie it doesn't exceed 32°C. Winter starts from November and continues upto February. The mean daily maximum temperature during winter is 19.1°C at Dehradun and 10.2°C at Mussoorie. The mean daily minimum temperature in January is 6.1°C at Dehradun and 2.5°C at Mussoorie.
67. The district receives an average annual rainfall of 2073.3 mm. Most of the rainfall is received during the period from June to September, July and August being the wettest months. The region around Raipur gets the maximum rainfall, while the southern part receives the least rainfall in the district. About 87% of the annual rainfall is received during the period June to September.
68. The climate varies from Sub-tropical monsoon type (mild Winter, hot summer) to tropical upland type (mild and dry winter, short mild summer) in district Uttarkashi. The northern part of the district is perennially under snow cover, here the climate is sub-arctic type as the area is represented by lofty Himalayan Range. Severe winter and comparatively higher rainfall are the characteristic features of the northern part. The district is represented by mainly four seasons viz. the cold winter season, (December to February), the hot weather season (March to May), southwest monsoon season (June to September) followed by post monsoon season (October to November). Rainfall, spatially, is highly variable depending upon the altitude. Larger part of the district is situated on the southern slopes of the outer Himalayas, monsoon currents can penetrate through trrenched valleys, the rainfall reaches its maximal in the monsoon season. About 75% of rain occurs in this zone during the monsoon season, June to September. August is the wettest month. Rainfall rapidly decreases after September and it is minimum in November. About 17% of the annual precipitation occurs in four winter months. The winter precipitation is in association with the passage of the western disturbances and is mostly in the form of snowfall, particularly at higher elevations. The precipitation during the pre-monsoon month, which is about 7% of the annual total and the post-monsoon months, is frequently associated with thunderstorms. The average annual rainfall is 1095.0, 1552.8, 1631.2, 1917.5, 1948.5, 2092.9 mm at the rainguage stations located at Dharasu, Uttarkashi, Rajgarhi, Jamuna Chetty, Rana and Kharsali, respectively.
69. The Pauri Garhwal district has a sub-temperate to temperate climate, which remains pleasant throughout the year. The maximum temperature recorded in the month of June is 45°C at Kotdwar while in the higher reaches at Dudhatoli it only rises to 25°C. Temperature descends to a minimum of 1.3°C in January, and mean monthly temperature for the region ranges from 25°C to 30°C. The hilly terrain with its densely forested slopes receives adequate rainfall generally commencing from mid-June and extending till mid-September. Occasional rainfall is also recorded in winter. Average annual rainfall in the district is 1232 mm about 90 percent of which is generally concentrated over the monsoon. Relative humidity varies between 54 and 63 percent. The higher reaches receive some snow in winter when temperature falls to freezing point.

D. Ambient Air Quality and Noise Level

70. The pristine environment and sparse population suggest that most part of the State have a very good air quality. Any point or non-point pollution sources of air pollution were not observed throughout the survey period. It was observed that the traffic on the roads is too low to cause unbearable air pollution due to vehicular exhaust. Finally, there are no industries recorded in or along the sub-project areas and hence any other source of atmospheric air pollution is not expected.
71. The air pollution level is well within the permissible limits because there are no major sources of pollution in the sub-project region. The baseline data on ambient air quality will be generated by the contractor before commencement of construction work. The proposed locations of air quality monitoring at pre-construction stage (baseline data) are as follows as per CPCB guidelines. The air parameters to be monitored are $PM_{2.5}$, PM_{10} , SO_2 , NO_x and CO.

Table IV-2: Locations for Generation of Baseline Data for Ambient Air Quality (AAQ) and Noise Levels

S. No.	Sub-Projects	No. of Stations	Sampling Locations	
			Location – 1	Location – 2
1.	Agastyamuri (GIC)	2	Nearest City/Town/Village (i.e. Augustamuri)	At project location (i.e. GIC)
2.	Srinagar(ITI Ground)	2	Nearest City/Town/Village (i.e. Srinagar)	At project location (i.e. ITI Ground)
3.	Ukhmath(GIC)	2	Nearest City/Town/Village (i.e. Ukhmath)	At project location (i.e. GIC)
4.	Barkot(Civil Aviation)	2	Nearest City/Town/Village (i.e. Barkot)	At project location (i.e. MPH Site)
5.	Manera(Sports stadium)	2	Nearest City/Town/Village (i.e. Uttarkashi)	At project location (i.e. Sports Stadium)
6.	Tyuni(Branal Basti)	2	Nearest City/Town/Village (i.e. Tyuni)	At project location (i.e. MPH site)
7.	Kotdwar	2	Nearest City/Town/Village (i.e. Kotdwar)	At project location (i.e. MPH site)
8.	Lansdowne	2	Nearest City/Town/Village (i.e. Lansdowne)	At project location (i.e. GIC Jaiharikhal)

72. During construction the sampling will be conducted where the construction/restoration work will be done.
73. Generally, noise pollution is not a problem in the state except in the urban areas like Dehradun. Traffic, industrial, and festival/cultural noises, along with noise generated from construction activities, DG sets etc., are the most prominent sources of noise in the urban areas. Overall noise level in the towns is almost calm except on some busy routes of Uttarakhand.
74. During the construction period, a temporary increase in the noise levels are expected as there will be movement of construction machineries and construction activities to be done in the proposed sites. Suitable noise barriers in the form of vegetation and timely scheduling of construction activities will help minimize these effects better.
75. It was observed that ambient noise scenario in residential, commercial, and sensitive areas in the study area are quite low in general. The baseline data on ambient air quality will be generated by collection of representative samples by the contractor before

commencement of construction works. The selection of sampling location will be representative of residential, commercial, institutional, industrial and sensitive locations. The proposed locations of noise quality monitoring at pre-construction stage (Baseline data) will be same as that indicated in **Table IV-2**.

E. Hydrology

76. Uttarakhand has tremendous water resources such as glaciers, lakes, rivers and other water bodies. Most of these have tourism importance like Milam, Pindari, Sunder Dhunga and Heeramani Glaciers; Seven lakes in Nainital; and some wetlands. However these water bodies are located far from the sub-project sites.
77. Generally, there has been an overall decline in water resources in the State. Hydrological studies over the last decades confirm the diminishing water resources and the worsening crises as caused by the following factors which have resulted in the decrease in underground seepages. These have directly contributed to the reduction of water availability in and reduction of discharge in nallas as well as extensive disappearance of springs-the region's primary source of drinking water.
- There has been a diminishing regulatory effect of glaciers of the Great Himalayan zone.
 - There is a long-term decreasing trend of stream discharges.
 - The capacities of the lakes have dwindled.
 - Surface runoff on the hillsides has shown high increase.
 - There has been an increase in floodwater and decrease in base flow water in channels and rivers.
 - Extensive soil erosion and landslips are recurring phenomena in the region.

1. Water Drainage

78. The region of Uttarakhand is well drained by numerous rivers and rivulets locally known as Gad (river) and Gadhera (rivulet). The water resources of this region are of singular importance not only for the region but also for the whole Gangetic plains of north India. There are three main river systems are: (i) the Bhagirathi – Alaknanda basin – Ganges basin, (ii) The Yamuna – Tons basin, and (iii) the Kali basin.
79. The Ganges system drains the major part of the region covering the whole of the Garhwal, except the western part of Uttarkashi district, and the western part of Garhwal Himalayas from an altitude of 7,138 m meet at Devprayag and flow as the Ganges thereafter. The Bhagirathi is the main stream while the Alaknanda, Saraswati, Deuli Ganga, Berahi Ganga, Nandakini, Mandakini, Madhu Ganga, Pindar, Atagad, Bhilangana, Jad Ganga, the Kaldi Gad and the Haipur are the main tributaries to the Alaknanda and Bhagirathi rivers, ultimately contributing to the waters of Holy river Ganga. The Nayar, which drains more than a half area of the Garhwal district, is an important tributary of the Ganga. The Yamuna-Tons system is also located in the Garhwal region. The Yamuna river rises at Yamunotri and is joined by important tributaries such as the Giri and more importantly, the Tons, which is its biggest tributary with 2.7 times greater volume of water than the Yamuna. The River Yamuna flows out of the hill areas through the Doon valley and the Shivaliks, into Haridwar district, being joined in the Doon valley by several streams.

2. Water Quality

80. The Rudraprayag town is situated on the confluence of Mandakini and Alaknanda River in Garhwal. There is very little documentation on the pollution status of rivers except that of the holy river Ganga and some other water bodies, where there were at least limited monitoring studies recently. In terms of quality, the surface water of the State is unprotected from untreated waste water, and runoffs from chemical fertilizers and pesticides. No proper sewage treatment facilities exist in the sub-project sites. The increasing pollution of water bodies constitutes the biggest threat to general public health and biodiversity of the state. At present, there is limited information available on the quality of fresh water resources of Uttarakhand State.

Based on limited records, the water quality of Uttarakhand's rivers, rivulets, and other natural water bodies is generally good and no major source of water pollution was found. The hand pumps, natural water seepage in hilly areas locally called as "Naula", and natural water springs locally called as "Gadhara" represent the ground water sources in the hills. There are no major sources of water pollution in terms of point or non-point sources aside from natural landslides leading to deposition of debris in streams. The baseline data on water quality will be generated by collection of representative samples by the contractor before the commencement of construction activity.

Table IV-3: Locations for Generation of Baseline Data for Water Quality

S. No.	Sub-Projects	No. of Sampling	Sampling Locations
1.	Agastyamuni	1	Nearest water body (Mandakini River)
2.	Barkot	1	Nearest water body (Yamuna River)
3.	Manera	1	Nearest water body (Bhagirathi River)
4.	Kotdwar	1	Nearest water body (A subsidiary to Nayar)
5.	Lansdwone	1	Ground Water
6.	Srinagar	1	Nearest water body (Alkananda River)
7.	Tyuni	1	Nearest Water body (Ton River)
8.	Ukhimath	1	Ground water

81. There are no surface water bodies / sources near to proposed sites for construction of MPH Cum Rescue Centres in two locations Viz. Lansdwone and Ukhimath but if ground water sources are available to nearest villages, monitoring will be done.

F. Mineral Resources

82. Uttarakhand is not very rich in field of mineral resources. Moreover, it is also part ecologically sensitive area, extensive quarrying is not practiced in the state. However, there are some minerals sparsely distributed in the state, which includes limestone, magnesite, gypsum, iron ore, graphite and copper.

83. It has been estimated that there are deposits of 100 million tonnes of limestone, 35 million tonnes of dolomite, 21 million tonnes of magnesite, 9.0 million tonnes of rock phosphate, 4.0 million tonnes of gypsum, and 8.8 million tonnes of soap stone in different areas of the State. Some of the major mineral deposits are indicated in the *Table IV-4*.

Table IV-4: Availability of important minerals (million tonnes)

S. No.	Name of Mineral	Quantity (million tonnes)
1.	Lime stone	430.5
2.	Marble	6.4
3.	Rock Phosphate	25.0
4.	Barytes	0.085
5.	Graphite	10.7
6.	Dolomite (superior)	30
7.	Magnesite	70.29%
8.	Copper	1.6
9.	Soap stone	76.64
10.	Gypsum	0.195

Source: <http://rtd.nic.in/Uttarakhand.htm>

84. The common minerals, which are found in the State are the following:

- I. **Asbestos:** This is of the amosite variety and can be used for the production of asbestos, cement bricks, laboratory asbestos sheet and paper, but it is considered as low economic importance.
- II. **Magnestic:** This is of an average quality is crystalline in nature, and is found associated with crystalline dolomites and sometimes with soapstone. The Magnesium carbonate found here is also of average quality and its mineralisation has also been reported some districts of Uttarakhand.
- III. **Soap stone or Steatite:** This is white saponaceous stone resembling pipe clay is obtained in as lenticular body and is associated with mineral pyrites, which adds a color to it, and in places with magnesite. it can be mined for use as filler in soap and in the cosmetic industries. In the past various utensils were made of it which, when polished, had the appearance of marble.
- IV. **Copper:** The copper mines in Uttarakhand are extensive and of reputed during the period of Hindus and The Gorkhas rules. All the rich mines have since being exhausted and at present they do not offer a fair field for the employment of capital.
- V. **Iron:** Small and sporadic occurrence of iron are known to occur in several parts of district but are of hardly any economic importance. Iron ore, rich in haematite, and magnetic ore, with haematite and siderite, also occur in Uttarakhand.
- VI. **Graphite:** In past, this mineral also known as plumbago, found mostly in patti Lohba, was used as a dye but no large deposits have been noticed for a long time.
- VII. **Gypsum:** This mineral is found on the bank of some rivers and was used in the past for the manufacture of saucers and bowls. When ground to a fine powder it is known as "Plaster of Paris" and can be used for a number of purposes.
- VIII. **Lead:** Deposits of this metal were fairly numerous in the past but it is found in somewhat inaccessible places and has long since ceased to be worked.
- IX. **Slate:** This is dense, fine grained metamorphic rock, which is produced from fine clay, can be split into thin, smooth plates and is quarried throughout Uttarakhand except some plains Districts. It is suitable for roofing purposes, the thin dark blue slates being somewhat inferior in quality.
- X. **Building Stone:** Stone which can be used for building purposes is available in most parts of Uttarakhand State. Sand stone is found in abundance in the lower hills. Gneiss and chlorite schists which are frequently used for building purposes.
- XI. **Sulphur:** This is yellow coloured mineral, also known as brimstone is found in the form of green sulphate of iron and is obtainable from iron pyrites and copper

mineral, its presence being characterised by a small amount of rotten eggs. Sulphur springs also occur in many parts of Uttarakhand State.

XII. Bitumen: The brownish white natural sulphate of alumina known as Shikajit is found in rocks at a fairly high altitude and occurs in small lumps which generally have an admixture of red sand and micaceous stone embedded in them. It is used in Ayurvedic medicine and during the season when there is an influx of pilgrims, it fetches good income to those who deal its business and collection from the nature.

85. Besides the above minerals, some other minerals found in small quantities such as antimony, arsenic, lignite or brown marble, mica and silver.

G. Seismology

86. The main tectonic elements of the region include the (i) central thrust and (ii) boundary fault. Several NE-SW lineaments are also known from the area and these traverse across different tectonic zones.

87. Seismically, the State constitutes one of the most active domains of the Himalayan region. Several damaging earthquakes are recorded from this region. As such, the region is classified under high seismic zones IV and V. All the proposed 8 MPH cum rescue centre sites are located in the Seismic Zone V. The modified mercalli intensity broadly associated with the zone V is IX. The seismic zones of India are represented in **Figure - 3** given below.

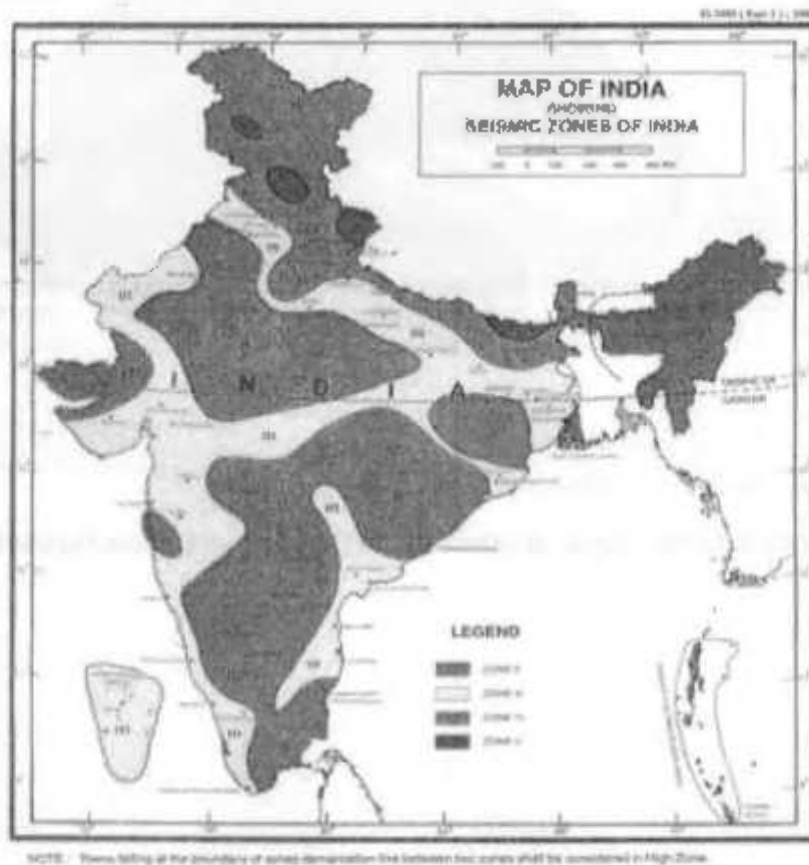
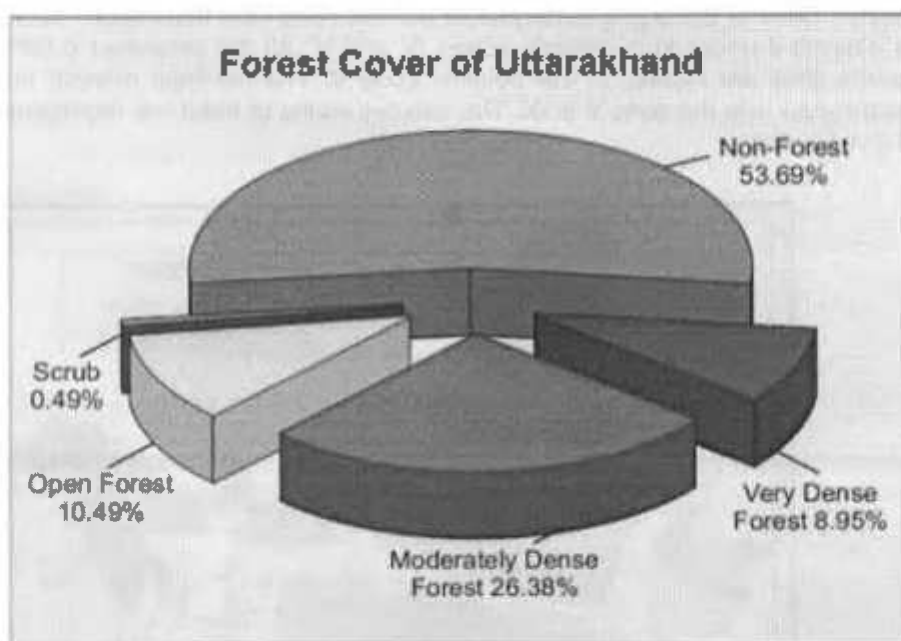


Figure - 3: Seismic Zones of India

H. Ecology

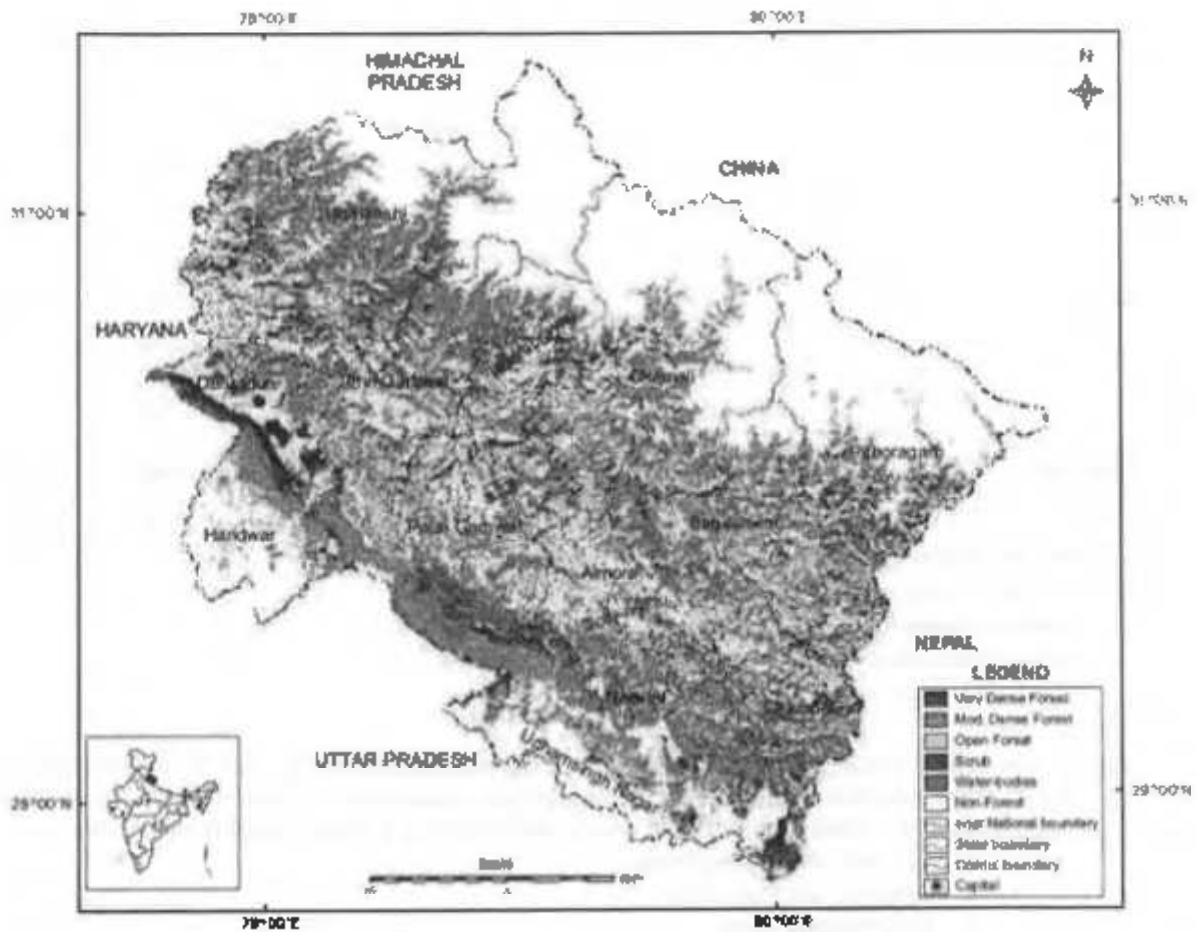
1. Forests

88. According to the India State Forest Report 2013, the recorded forest area of the Uttarakhand state is 24,508 Km², which constitutes 45.82% of its total geographical area. The Very Dense Forests constitute of 4,785 km², Moderate dense forest of 14,111 km² and Open Forest of 5,612 km².
89. The Garhwal region has more forest cover with 14,639 km² compared to the Kumaon region with 9,869 km². However, they are almost equal in terms of distribution over its territory with 45% and 47% of covered with forest. The district of Pauri Garhwal, Uttarkashi, Nainital, and Chamoli have the largest forest cover accounting for 50% of all the state's total. The forest covers of Uttarakhand state are shown in **Figures – 4 & 5** and the district-wise forest cover are given in **Table IV-5**.



Source: India State Forest Report, 2013

Figure - 4: Forest Cover of Uttarakhand (As per India: State Forest Report, 2013)



Source: India State Forest Report, 2013

Figure-5: Forest Cover Map of Uttarakhand

Table IV-5: District-wise Forest Cover, Uttarakhand

Divisions	Districts	Geographical Area (Km ²)	Forest Cover (Km ²)			Total Forest	% of GA
			Very Dense	Moderate Dense	Open Forest		
Garhwal	Chamoli	8,030	441	1,573	686	2700	39.23
	Dehradun	3,088	583	695	332	1,610	52.17
	Pauri Garhwal	5,329	520	2,096	676	3,291	61.76
	Rudraprayag	1,984	241	592	297	1,130	56.96
	Tehri Garhwal	3,642	298	1,232	618	2,148	58.96
	Uttarkashi	8,016	570	1,957	618	3,145	39.23
	Haridwar	2,360	25	333	257	615	26.06
Sub-total	7 Districts	32,449	2,678	8,477	3,484	14,639	45.11

Divisions	Districts	Geographical Area (Km ²)	Forest Cover (Km ²)			Total Forest	% of GA
			Very Dense	Moderate Dense	Open Forest		
Kumaon	Pithoragarh	7,090	571	1,113	416	2,100	29.62
	Bageshwar	2,246	197	883	305	1,385	61.67
	Almora	3,139	222	927	428	1,577	52.04
	Nainital	4,251	605	1,899	570	3,074	72.31
	Champawat	1,766	337	576	274	1,187	67.21
	Udham Singh Nagar	2,642	175	236	135	546	21.48
Sub-total	6 Districts	21,034	2,107	5,634	2,128	9,869	50.38
Total	13 Districts	5,3483	4,785	14,111	5,612	24,508	45.82

Source: India State Forest Report, 2013

Note: (i) **Very Dense Forest:** All lands having tree canopy cover > 70%.

(ii) **Moderate Dense Forest:** Tree canopy cover between 40%-70%.

(iii) **Open Forest:** Tree canopy cover between 10%-40% and

(iv) **Degraded Forest:** Tree canopy cover <10%.

90. Forest type mapping using satellite data has been undertaken by the "Forest Survey of India" with reference to the classification given by Champion and Seth (1968). As per this assessment, the state has 34 forest types, which belong to eight forest type groups, viz.

- Tropical Moist Deciduous,
- Tropical Dry Deciduous,
- Sub-tropical Pine,
- Himalayan Moist Temperate Forests,
- Himalayan Dry Temperate Forests,
- Sub-Alpine Forests,
- Moist Alpine Scrub and
- Dry Alpine Scrubs.

91. A wide variety of trees are found in Uttarakhand State. Some prominent tree species enumerated in this section based on their altitudinal gradients above mean sea level. Some notable tree species are Poplar (*Populus ciliata*) and Eucalyptus (*Eucalyptus citriodora*) due to their fast growing and large market demands, and Khair (*Acacia catechu*), Sal (*Shorea robusta*), Sesam (*Dalbergia sissoo*) etc. for their ecological and economic importance. which are highly adapted to sandy soil are being used to stabilize river banks and islands in river beds. Oak (*Quercus* sp.) is another important species considered to be amongst the best wood in the world specially for making agriculture implements due to its good compactness with twisted fibers. The State Govt. of Uttarakhand has declared the oak tree (*Quercus leucotrichophora*) as a *Kalpavriksha* or wish fulfilling divine tree often treated as the signature plant of the Kumaon Himalayas as numerous logos and insignias with a stylized version of the deodar inscribed on them. The Chir-Pine (*Pinus roxburghii*) is an excellent source of resin in Uttarakhand, which is used in production of terpenine oil. The Deodar (*Cedrus deodara*) grows in the temperate to alpine area that is found between 1800 to 2400 m (amsl). Its oil has an

Important medicinal property generally used in skin diseases and disorders. The predominant top-canopy (tree) species of the State forests have been described in **Table IV-6** given below.

Table IV- 6: Predominant top-canopy (tree) species according to altitude (m. amsl)

Sl. No.	Name of Some Common Tree Species of Uttarakhand			Altitude (m. amsl)
	Vernacular	English Name	Botanical Name	
1.	Cheed	Chlr-Pine	<i>Pinus roxburghii</i>	600-1800
2.	Kail	Blue-Pine	<i>Pinus wallichiana</i>	1800-2400
3.	Banj	Himalayan Oak Tree	<i>Quercus incana</i>	1700-2000
4.	Deodar	Himalayn Cedar Tree	<i>Cedrus deodara</i>	1800-2400
5.	Raga	Himalayan Low Level Fir	<i>Abies pindrow</i>	2100-2900
6.	Raga	Himalayan High Level Fir	<i>Abies spectabilis</i>	2900-3600
7.	Thuner	Himalayan Yew	<i>Taxus baccata</i>	2400-2700
8.	Bhojpatra	Himalayan Blrch	<i>Betula utilis</i>	3000-3500
9.	Kathbhoj	Himalayan Blrch	<i>Betula alnoides</i>	2800-3200
10.	Moru	Oak Tree	<i>Quercus dilatata</i>	2000-2500
11.	Kharsu	Oak Tree	<i>Quercus semicarpifolia</i>	2200-2400
12.	Spruce	Spruce	<i>Picea smithiana</i>	2400-2900
13.	Surai	Cypress	<i>Cupressus torulosa</i>	2300-2400
14.	Pangar	Horse Chestnut	<i>Aesculus indica</i>	1800-2100
15.	Buransh	Rose Wood	<i>Rhododendron arboreum</i>	1600-2000
17.	Simaru	Rose Wood	<i>Rhododendron campanulatum</i>	2200-3000
18.	Kachnar	Orchid Tree	<i>Bauhinia variegata</i>	600-900
19.	Shal	Shal Tree	<i>Shorea robusta</i>	600-750
20.	Sagwan	Teak	<i>Tectona grandis</i>	600-750

2. Agriculture

92. Agriculture is the main economic activity in the State as per latest land-use statistics. The total reported area for agricultural activity is 55.66 lakh hectares. In the hills, the major crops grown include wheat, paddy, mandua, ramdana and potato whereas in the plains the major crops are wheat, paddy, pulses, and sugarcane.
93. The pattern of land ownership is unlike that found in the rest of India. Most of the Uttarakhand farmers are owner-cultivators. Tenant farming and share cropping are rare while land holdings are generally small and limited to family farms - approximately 50 percent of all land holdings are less than 0.5 hectares in size and 50 percent under one hectare. As such, the zamindari system of big landholders is limited to the plains. Both the geography and the Pahari cultural heritage have played roles in maintaining a traditionally more equitable, if impoverished, land distribution in Uttarakhand.

Table IV-7. Area under Principal Crops and Productivity in Uttarakhand

Sl. No.	Items	Year/ Period	Unit	Statistics
A. Area Under Principal Crops (Provisional)				
1.	Cereals	2011-12	Ha	896774
	(i) Rice (<i>Oryza sativa</i>)	2011-12	Ha	280108
	(ii) Wheat (<i>Triticum aestivum</i>)	2011-12	Ha	369209
	(iii) Barley (<i>Hordeum vulgare</i>)	2011-12	Ha	22508
	(iv) Maize (<i>Zea mays</i>)	2011-12	Ha	28038
	(v) Finger millet (<i>Eleusine coracana</i>)	2011-12	Ha	125163
	(vi) Sanwan	2011-12	Ha	63002
	(vii) Other	2011-12	Ha	8746
2.	Pulses	2011-12	Ha	55690
	(i) Urad (<i>Phaseolus radiatus</i>)	2011-12	Ha	12980
	(ii) Lentil (<i>Lens esculenta</i>)	2011-12	Ha	12285
	(iii) Pea (<i>Pisum sativum</i>)	2011-12	Ha	3451
	(iv) Gahat (<i>Mycrotoma biflorum</i>)	2011-12	Ha	12033
	(v) Rajma (<i>Dolichos lablab</i>)	2011-12	Ha	4614
	(vi) Gram (<i>Cicer arietinum</i>)		Ha	766
	(vii) Bhatt (Black Soyabean)	2011-12	Ha	5734
	(viii) Others	2011-12	Ha	3817
3.	Oil Seeds	2011-12	Ha	29705
	(i) Mustard (<i>Brassica campestris</i>)	2011-12	Ha	14294
	(ii) Sesamum (<i>Sesamum indicum</i>)	2011-12	Ha	2020
	(iii) Groundnut (<i>Arachis hypogea</i>)	2011-12	Ha	1112
	(iv) Soyabean (<i>Glycin max</i>)	2011-12	Ha	12279
4.	Other Crops	2011-12		
	(i) Sugarcane (<i>Saccharum officinarum</i>)	2011-12	Ha	108255
	(ii) Onion (<i>Allium cepa</i>)	2011-12	Ha	2353
B. Agriculture Productivity (Provisional)				
1.	Cereals	2011-12	Qtl./Ha	22.03
	(i) Rice (<i>Oryza sativa</i>)	2011-12	Qtl./Ha	21.20
	(ii) Wheat (<i>Triticum aestivum</i>)	2011-12	Qtl./Ha	23.80
	(iii) Barley (<i>Hordeum vulgare</i>)	2011-12	Qtl./Ha	12.64
	(iv) Maize (<i>Zea mays</i>)	2011-12	Qtl./Ha	14.66
	(v) Finger millet (<i>Eleusine coracana</i>)	2011-12	Qtl./Ha	13.92
2.	Pulses	2011-12	Qtl./Ha	8.15
	(i) Urad (<i>Phaseolus radiatus</i>)	2011-12	Qtl./Ha	8.13
	(ii) Lentil (<i>Lens esculenta</i>)	2011-12	Qtl./Ha	8.19
	(iii) Pea (<i>Pisum sativum</i>)	2011-12	Qtl./Ha	9.54
	(iv) Gahat (<i>Mycrotoma biflorum</i>)	2011-12	Qtl./Ha	8.04
	(v) Rajma (<i>Dolichos lablab</i>)	2011-12	Qtl./Ha	10.27
	(vi) Gram (<i>Cicer arietinum</i>)		Qtl./Ha	7.85
	(vii) Bhatt (Black Soyabean)	2011-12	Qtl./Ha	9.83
3.	Oil Seeds	2011-12	Qtl./Ha	8.34
	(i) Mustard (<i>Brassica campestris</i>)	2011-12	Qtl./Ha	8.00
	(ii) Sesamum (<i>Sesamum indicum</i>)	2011-12	Qtl./Ha	2.26
	(iii) Groundnut (<i>Arachis hypogea</i>)	2011-12	Qtl./Ha	12.72
	(iv) Soyabean (<i>Glycin max</i>)	2011-12	Qtl./Ha	14.46
4.	Other Crops	2011-12	Qtl./Ha	
	(i) Sugarcane (<i>Saccharum officinarum</i>)	2011-12	Qtl./Ha	609.33
	(ii) Onion (<i>Allium cepa</i>)	2011-12	Qtl./Ha	55.69

Source: Uttarakhand at a Glance (2012-13), Directorate of Economics & Statistics, GoU.

Table IV-8: Ecological Sub-Regions and Altitude-wise Major Agriculture Crops

Sl. No.	Ecological Sub-Region	Altitudinal Gradient (m)	Major Agriculture Crops
1.	Lower Dun, Terai	300-600	Wheat (<i>Triticum aestivum</i>), Paddy (<i>Oryza sativa</i>) and Sugarcane (<i>Sachharum officinarum</i>).
2.	Upper Dun, Bhabar, lower Shivaliks	600-1,200	Wheat (<i>Triticum aestivum</i>), Paddy (<i>Oryza sativa</i>), Maize (<i>Zea mays</i>) Chaulai (<i>Amaranthus species</i>) Finger millet (<i>Eleusine coracana</i>) Barnyard millet (<i>Echinochloa frumentesia</i>)
3.	Middle Garhwal-Kumaon Region	1,200-1,800	Wheat (<i>Triticum aestivum</i>), Paddy (<i>Oryza sativa</i>), Cheena (<i>Panicum miliaceum</i>), Potato (<i>Solanum tuberosum</i>), Barley (<i>Hordeum vulgare</i>) Finger millet (<i>Eleusine coracana</i>) and Barnyard millet (<i>Echinochloa frumentesia</i>);
4.	Upper Garhwal-Kumaon Region	1,800-2,400	Wheat (<i>Triticum aestivum</i>) Barley (<i>Hordeum vulgare</i>) Potato (<i>Solanum tuberosum</i>), Chaulai (<i>Amaranthus species</i>), Cheena (<i>Panicum miliaceum</i>) and Phaphra (<i>Fagopyum tataricum</i>)
5.	Cold Zone	2,400-3,600	Summer Crops: Wheat (<i>Triticum aestivum</i>), Barley (<i>Hordeum vulgare</i>) Potato (<i>Solanum tuberosum</i>), Phaphra (<i>Fagopyum tataricum</i>) Chaulai (<i>Amaranthus species</i>), Kauni (<i>Setaria otalica</i>) Ogel (<i>Fagopyrum esculentum</i>) and Uva Jau (<i>Hoyeleum himalayense</i>)

Source: Uttarakhand at a Glance (2012-13), Directorate of Economics & Statistics, GoU.

94. The irrigation facility is only available adjoining to rivers in valleys. The cross drainages are very limited within the state. The irrigation and drainage system in Uttarakhand is described in Table IV-9 given below.

Table IV-9: Mode of Irrigation and Drainage System in Uttarakhand

Sl. No.	Items	Year/Period	Unit	Statistics
A. Net and Gross Irrigated Area				
1.	Canals	2011-12	Ha	83887
2.	Tube Wells	2011-12	Ha	216100
3.	Other Wells	2011-12	Ha	11519
4.	Tanks/ Ponds	2011-12	Ha	83
5.	Other Sources	2011-12	Ha	24747
6.	Net Irrigated Area (NIA)	2011-12	Ha	336136
7.	Gross Irrigated Area (GIA)	2011-12	Ha	561733
B. Irrigational Infrastructure				
1.	Length of Canals	2011-12	Km.	11588
2.	Length of Lift Canals	2011-12	Km.	242

Sl. No.	Items	Year/Period	Unit	Statistics
3.	Tube Wells (State)	2011-12	No.	1110
4.	Pump Sets (Boring/ Free Boaring)	2011-12	No.	54642
5.	Hauj	2011-12	No.	32850
6.	Gool	2011-12	Km.	26365
7.	Hydrum	2011-12	No.	1547
8.	C.C.A. Under State Canal	2011-12	Lakh (Ha)	3.302
9.	Revenue Collection by Irrigation	2011-12	Rs. (Lakh)	252.27

Source: Uttarakhand at a Glance (2012-13), Directorate of Economics & Statistics, GoU.

3. Fishery

95. The State has great potential for the development of fisheries. The State abounds in perennial and seasonal water bodies which hold high promise for the growth of fishery. Golden Mahseer (*Tor putitora*), one of the main game and food fish in the central Himalayan region, has decreased significantly. The fish migrate considerable distances upstream in search of suitable spawning grounds. Stocks of the Himalayan mahseer are depleted and it is now considered an endangered species. Catch data from the major rivers are not available while studies are characterized as sporadic and preliminary in nature. According to available statistics, the Himalayan Mahseer contributes significantly only in one river-comprising 32.8% of the catch from the Nayar River, 9.7% from Song River, and 0.8-3.1% from other rivers. The important fishes commonly found in the Himalayan river basins are *Catla catla*, *Labeo rohita*, *Labeo calbase*, *Cirrihinus mirigale*, *Rita rita*, *Heteropneustus forilis*, *Notopterus nontopterus*, *Macrobrachum rosenbergii*, *Channa punetatus* etc.
96. No interference with fishery activities is envisaged by execution of the proposed subprojects.

4. Biodiversity and Protected Areas

97. The State of Uttarakhand is endowed with rich bio-diversity as manifested by its approximately 46 percent forest cover. The State has established six national parks and seven wildlife sanctuaries for the conservation of flora and fauna. Such areas include the Nanda Devi National Park, Valley of Flowers, Gangotri National Park, Govind Pashu Vihar National Park, Rajaji National Park, Jim Corbett National Park, Kedamath Wildlife Sanctuary, Askot Musk Deer Sanctuary, Mussoorie Sanctuary, Binsar Wildlife Sanctuary, Sanadi Sanctuary, Nandhaur Wildlife Sanctuary and Govind Wildlife Sanctuary—all of which are being looked after by the Uttarakhand government. A positive remark on the State is that it maintains rich wildlife outside their protected areas.

Table IV-10: Wildlife In Uttarakhand

Sl. No.	Protected Areas	Year	Unit	Statistics
1.	Biosphere Reserves			
	(i) Number	2013-14	No.	1
	(ii) Area	2013-14	km ²	5,860.69
2.	National Parks			
	(i) Number	2013-14	No.	6
	(ii) Area	2013-14	km ²	4,915.02
3.	Wildlife Sanctuaries			
	(i) Number	2013-14	No.	7
	(ii) Area	2013-14	km ²	2,690.12

Sl. No.	Protected Areas	Year	Unit	Statistics
4.	Important Wild Animals			
	(i) Tiger	2008	No.	178
	(ii) Leopard	2008	No.	2335
	(iii) Elephant	2008	No.	1346
	(iv) Musk Deer	2008	No.	376
	(v) Black Bear	2008	No.	1935
	(vi) Sloth Bear	2008	No.	172
	(vii) Brown Bear	2008	No.	14

Source: Wildlife and Protected Areas, ENVIS, 2014

98. The Himalayas represent one of the most fascinating biota (fauna and flora) all over the world, both in terms of quality and quantity. This is evident from the fact that more than 50 percent of all biota can be found only in the Himalayan region. Such fact is brought about by the region's uniqueness in terms of favorable climatic conditions, natural habitats, and soil types.
99. The State of Uttarakhand is represented by Biogeographic Zones 2B Western Himalaya and 7B Siwaliks¹ in this region. About 18.7% of the total area under the Forest Department has been clearly earmarked for biodiversity conservation by the creation and management of 12 Protected Areas (PA) and a biosphere reserve in the State.

Table IV-11: Protected Areas in Uttarakhand

Sl. No.	Protected Area	District	Establishment	Area (m ²)
National Park				
1.	Corbett	Nainital & Pauri Garhwal	1936	520.82
2.	Nanda Devi	Chamoli	1982	624.80
3.	Valley of Flowers	Chamoli	1982	87.50
4.	Rajaji NP	Dehradun, Pauri & Haridwar	1983	820.00
5.	Gangotri	Uttarkashi	1989	2390.02
6.	Govind	Uttarkashi	1990	472.08
Wildlife Sanctuary				
1.	Govind WLS	Uttarkashi	1955	485.89
2.	Kedamath WLS	Chamoli	1972	975.20
3.	Askot WLS	Pithoragarh	1986	600.00
4.	Sonanadi WLS	Garhwal	1987	301.18
5.	Binsar WLS	Almora	1988	47.07
6.	Mussoorie WLS	Dehradun	1993	10.82
7.	Nandhaur WLS	Nainital and Champawat	2012	269.96

Source: Wildlife and Protected Areas, ENVIS, 2014

100. Variations in the topography of high mountain ranges and deep valleys and altitudes from sea-level portions give the project districts different habitats for a variety of fauna and in turn resulted in the enriched biodiversity in the region. The common wildlife reported from the forests includes Tigers, Panthers, Civet Cats, Leopard Cats, Jungle Cats, Himalayan Silver Fox, and the Jackal. Various species of deer including the Musk Deer and the Barking Deer also roam in the districts. Sambhar and Gural as well as the Bear and the Porcupine are also found in the project area. The flying mammal Bat is also common in the area. Other animals in the region include the Chipmunk, the Rhesus Monkey and the Flying Squirrel. Discussion with local people during the survey process generated reports

¹ Negi, A.S., Status, Distribution and Management of Mountain Ungulates in Uttarakhand. Enviro Bulletin, 2002

on the presence of Leopards, Deers, Foxes, and Wild Pigs. Some Important information about wildlife of Uttarakhand is given in the Table below.

Table IV-12: List of Major Flora

Sl. No.	Local Name	Scientific Name
A. Trees		
1.	Buransh	<i>Rhododendron arboreum</i>
2.	Deodar	<i>Cedrus deodara</i>
3.	Chir	<i>Pinus roxburghii</i>
4.	Surai	<i>Cupressus tourulosa</i>
5.	Padam	<i>Frunus comuta</i>
6.	Mehal	<i>Pyrus pashia</i>
7.	Otis	<i>Atrus nepalensis</i>
8.	Ayar	<i>Lyonia ovalifolia</i>
9.	Kafal	<i>Myrica sapida</i>
10.	Akhrot	<i>Juglans regia</i>
11.	Bhimal	<i>Grewia optiva</i>
12.	Rittha	<i>Sapindus mukorossi</i>
13.	Tun	<i>Toona ciliata</i>
14.	Nimla	<i>Ficus auriculata</i>
15.	Timur	<i>Zanthoxylum lamata</i>
16.	Kharik	<i>Celtis australis</i>
17.	Chamkhirk	<i>Carpinus viminea</i>
18.	Katmon	<i>Betula alnoides</i>
19.	Kajal	<i>Acer acuminatum</i>
20.	Katoj	<i>Castanopsis tribuloides</i>
21.	Kimola	<i>Acer oblongum</i>
22.	Kandru	<i>Ilex dipyrene</i>
23.	Banj	<i>Quercus semicarpifolia</i>
B. Shrubs		
1.	Kala Hisalu	<i>Rubus lasiocarpus</i>
2.	Karoz	<i>Carissa spinarium</i>
3.	Kobra Plant	<i>Arisema helleborifolium</i>
4.	Kandali	<i>Urtica parviflora</i>
5.	Satavar	<i>Asparagus racemosus</i>
6.	Dudhi	<i>Hoffmannia antidysentric</i>
7.	Bajradanti	<i>Potentilla fulgens</i>
8.	Banfesa	<i>Viola surpans</i>
9.	Bach	<i>Acorus calamus</i>
10.	Nakol	<i>Urtica dioica</i>
11.	Patyura	<i>Pteracanthus angustifrons</i>
12.	Dudhia	<i>Taraxacum officinale</i>
13.	Vatula	<i>Flemingia fruticulose</i>
14.	Belmur	<i>Flacourtia indica</i>
15.	Nirghesi	<i>Delphinium denudatum</i>
16.	Silfoda	<i>Bergenia gossypina</i>
17.	Jula	<i>Gerbera grassypina</i>
C. Grasses and Herbs		
1.	Dub	<i>Cynodon dactylon</i>
2.	Kush	<i>Sacharum spontaneum</i>
3.	Gol ringal	<i>Chimonobambusa falcata</i>
4.	Jatamasl	<i>Nardostachys grandiflora</i>
5.	Tachila	<i>Apluda mutic</i>

Sl. No.	Local Name	Scientific Name
6.	Dev ringal	<i>Thamnocalamus facloueri</i>
7.	Jhugra ringal	<i>Arundinaria jaunserensis</i>
8.	Thamgil	<i>Thamnocalamus spathiflorus</i>

Table IV-13: List of Major Fauna

Sl. No.	Wild Animals	
	Local Name	Scientific Name
A. Mammals		
1.	Guldar	<i>Panthera pardus</i>
2.	Kala Bhalu	<i>Selenarctos thibetanus</i>
3.	Ghural	<i>Memorhaedus goral</i>
4.	Kakar	<i>Muntiacus muntjak</i>
5.	Khirao	<i>Capricornis sumatraensis</i>
6.	Jangli Suar	<i>Sus-scrofa cristatus</i>
7.	Chitrola	<i>Martes flavigula</i>
8.	Langoor	<i>Presbytis entellus</i>
9.	Khargosh	<i>Lepus nigricollis</i>
10.	Sehi	<i>Hystrix indica</i>
11.	Gidar	<i>Canis aureus indicus</i>
12.	Jangli Billi	<i>Felis chaus</i>
13.	Gilehri	<i>Eurambulus pennant</i>
14.	Bandar	<i>Macaque muleta</i>
B. Birds		
1.	Chir Fijent	<i>Catreus wallichii</i>
2.	Kalij Fijent	<i>Lophura leucomelana</i>
3.	Koklaj Fijent	<i>Pucassia macrolophus</i>
4.	Kala Ingal	<i>Leinaetus makavensis</i>
5.	Karola	<i>Urocissa erythrorhyncha</i>
6.	Ullu	<i>Strix aluco nivicola</i>
7.	Baaj	<i>Falco severaus</i>
8.	Kala Titar	<i>Francolinus francolinus</i>
9.	Papiha	<i>Cuculus varius</i>
10.	Tota	<i>Psittacula himalayana</i>
11.	Chakor	<i>Alectoris graeca chuker</i>
12.	Harlyal	<i>Treron spenura</i>
13.	Pashchimi Tregopan	<i>Tragopan melocephalus</i>
14.	Bulbul	<i>Pyconotus cafer</i>
15.	Maina	<i>Aeriotheres tristis</i>
16.	Fakhta	<i>Streptobelia orientalis maena</i>
17.	Gidh	<i>Gyps himalayensis</i>
18.	Kauwa	<i>Carvus macromynchos</i>
19.	Saat Bahan	<i>Tayrdoides striatus</i>
20.	Neelkanth	<i>Garrulus lanacletus</i>

Source: Negi, A.S., Status, Distribution and Management of Mountain Ungulates in Uttaraanchal, *Ervis Bulletin*, 2002.

5. Biosphere Reserves

101. The Biosphere Reserve is the top category after Wildlife Sanctuary and National Park in the Country. Out of the 14 Biosphere Reserves situated in India, the Nanda Devi Biosphere Reserve (NDBR)—established second among the 14—is situated in the State of Uttarakhand. It extends in the three districts of Chamoli (Garhwal), Pithoragarh, and

Bageshwar (Kumaon). The Nanda Devi National Park (NDNP) and the Valley of Flowers are UNESCO World Heritage Site declared in 1988. The NDNP is located in the transition range between the Zaskar range and Himalayan foothills with 97 species of plants including many rare and almost extinct plants like *Saussurea sudhanshui*, *Nardostachys grandiflora*, *Picrorhiza kurroa*, *Cypripedium elegans*, *C. himalaicum*, *Dioscorea deltoidea* and *Allium stracheyi*. There are also 83 animal species including the Bharal (*Pseudois nayaur*), Himalayan Musk Deer (*Moschus chrysogaster*), Mainland Serow (*Capricornis sumatraensis*), Himalayan Tahr (*Hemitragus jemlahicus*), Goral (*Nemorhaedus goral*), Snow Leopard (*Panthera uncia*), Common Leopard (*Panthera pardus*), Himalayan Black Bear (*Selenarctos thibetanus*), Common Langur (*Presbytis entellus*), and Rhesus Macaque (*Macaca mulatta*). Also, there are about 114 avian species and 27 species of butterflies in the NDNP.

102. The Rajaji National Park was established in 1983 protecting sections of the tropical deciduous forest area of the Shivalik Hill range on the Himalayan foothills. The Park covers 820.42 square kms, along the Haridwar, Dehradun and Pauri Garhwal. The park has a vast Sal forest, and mixed forest mostly covered with *Acacia catechu* and *Vetiveria zizanioides*. It is refuge to approximately 49 species of mammals, 315 species of birds, 49 species of reptiles, 10 species of amphibians and 49 of Piscean species. This park has the largest population of elephants in Uttarakhand and a large population of tigers and leopards. Notable animals seen in the park are the Wild Cat (*Felis silvestris*), Goral (*Nemorhaedus goral*), Rhesus Macaque (*Macaca mulatta*), Himalayan Yellow Throated Marten (*Martes flavivulva*), Monitor Lizard (*Varanus*), Indian Hare (*Lepus nigricollis*), Sloth (*Folivora*), Himalayan Black Bear (*Ursus thibetanus*), King Cobra (*Ophiophagus Hannah*), Jackal (*Canis*), Barking Deer (*Muntiacus muntjak*), Sambar (*Rusa unicolor*), Wild boar (*Sus scrofa*), Indian Langur (*Semnopithecus entellus*), Indian Porcupine (*Hystrix indica*) and Pythons (*Pythonidae*). The population of birds consists of the Great Pied Hornbill (*Buceros bicornis*), Himalayan Pied Kingfisher (*Ceryle rudis*), Sparrows (*Passeridae*), Fire Tailed Sunbird (*Aethopyga ignicauda*) and the Peacock (*Pavo cristatus*) - Indian National Bird.
103. The Jim Corbett National Park covers 520 sq kms of Savannah-type grasslands and Sal forests. Declared as a Tiger Reserve in 1973, the Park has a rich diversity including the White Tiger (*Panthera tigris tigris*), Throated Marten (*Martes flavivulva*), Himalayan Palm Civet (*Paradoxurus hermaphroditus*), Indian Grey Mongoose (*Herpestes edwardsii*), Para, Kakka, Goral (*Nemorhaedus goral*), Bar-headed Goose (*Anser indicus*), Duck, Grebe, Snipe (*Gallinago gallinago*), Turtles, Python (*Pythonidae*), Common Otter (*Lutrinae*), Porcupine (*Hystrix indica*), Clack-taped Hare, Chital (*Axis axis*), Spotted Deer (*Axis axis*), Viper, Cobra, Krait, King Cobra (*Ophiophagus Hannah*), Tortoise (*Testudinidae*), Graylag goose (*Anser anser*), Sandpiper (*Scolopacidae*), Gull (*Laridae* sp.), Cormorants (*Phalacrocoracidae* Sp.) and Egrets (*Ardea alba*).
104. The Govind National Park covers an area of 957 sq. kms in Uttarakashi and a sanctuary for the endangered Snow Leopard and some other 15 species of mammals and 150 species of birds that includes the Himalayan Black bear (*Ursus thibetanus*), Brown bear (*Ursus arctos*), Musk deer (*Moschus*), Bharal *Pseudois nayaur*, Himalayan Tahr (*Hemitragus jemlahicus*), Serow (*Capricornis*) and Common leopard (*Panthera pardus*). The endangered birds found in this region are Monal Pheasant (*Lophophorus impejanus*), Koklas Pheasant, Bearded Vulture Himalayan Snow Cock (*Gypaetus barbatus*), Golden Eagle (*Aquila chrysaetos*), Western Tragopan (*Tragopan melanocephalus*), Steppe Eagle (*Aquila nipalensis*) and Black Eagle (*Ictinaetus malaiensis*). Other varieties of birds include Owls, Pigeons, Minivets, Thrush, Warblers, Bulbul, Cuckoo and Finches.

105. The Valley of Flowers is a World Heritage Site located in Chamoli. There are hundreds of species mostly being Orchids, Poppies, Primula, Calendulas, Iris, Lily, Roses, Violets, Rhododendron, Angelica, Himalayan Fritillary, Daisies and Anemones and also supports a variety of mammals like the Himalayan Tahr, Snow Leopard, Musk Deer, Red Fox, Common Langur (a type of monkey), Bharal, Serow, Himalayan Black Bear, Himalayan Brown Bear, Pica (Mouse hare). A huge variety of butterflies and birds are also found in the valley including Himalayan Golden Eagle, Griffon Vulture, Snow Partridge, Himalayan Snow Cock, Himalayan Monal, Snow Pigeon, and Sparrow Hawk. All the protected sites listed above are far away from the 23 sub-project locations.

I. Socio-Economic Profile

1. Social and Cultural Development

106. The State of Uttarakhand occupies a total land area of 53,483 Km², which is about 1.73% of the total geographical area of the country. The native people of Uttarakhand are generally called either Garhwali or Kumaoni depending on their place of origin in either the Kumaon or Garhwal region.
107. According to the 2011 census of India, Uttarakhand has a population of 10,086,292 people comprising 5,137,773 males and 4,948,519 females. The state is the 20th most populous state of the country having 0.84% of the population on 1.69% of the land. The population density of the state is 189 people/Km² having a 2001-2011 decadal growth rate of 18.81%. The gender ratio is 963 females/1000 males. The crude birth rate in the state is 18.6 with the total fertility rate being 2.3. The state has an infant mortality rate of 43, a maternal mortality rate of 188 and a crude death rate of 6.6.
108. Administratively, the State is divided into Garhwal and Kumaon Divisions and 13 Districts, 49 Tehsils and 95 Blocks. The Kumaon and Garhwal Divisions have six and seven Districts respectively. There are 16,177 villages in the State and 7,227 gram panchayats. Of the total number of villages, 5,868 villages are not connected by roads.

2. Land Use Pattern

109. The land use pattern of Uttarakhand is strongly governed by the following geo-climatic factors: altitudinal gradients, climate, mountainous terrain, lithological type, topography, surface hydrology, exposure of sun light in the crop fields, forests and alpine meadows, sparse vegetation (scrub), human settlement areas, grazing and barren land etc.
110. Forest is the main land use sector in the State and nearly 45.82% of the geographical area is under forest cover. The timber line vegetation is clearly demarcated above 2900 m (amsl) altitude. Agriculture is confined to areas of low reliefs, which are underlined by weak rock formation (*i.e.* schists, phyllites, weathered gneisses, and crushed quartzite). The cultivated land, approximately 12.44% of the total geographical area, is either terraced/semi-terraced or plain. Other land use categories such as meadows, grazing lands, and scrubs do not exhibit definite relationship with lithology. It is also observed that the south-facing hill slopes are covered by lush green forests. The land use pattern of Uttarakhand is given in **Table IV-14**.

Table IV-14: Land Utilisation In Uttarakhand

S. No.	Land-use	Period	Unit	Statistics
1	Total Reported Area	2012-13	Hectare	5872636
2	Forest Area	2012-13	Hectare	3484803
3	Culturable Waste Land	2012-13	Hectare	3'4664

S. No.	Land-use	Period	Unit	Statistics
4	Fallow Land	2012-13	Hectare	136288
	(i) Current Fallow	2012-13	Hectare	50655
	(ii) Fallow Land other than Current Fallow	2012-13	Hectare	85633
5	Barren & Unculturable Land	2012-13	Hectare	227706
6	Land under Non-agricultural Uses	2012-13	Hectare	221135
7	Permanent Pasture & Other Grazing Land	2012-13	Hectare	192149
8	Land under Misc., Tree Crops and Groves not included in Net Area Sown	2012-13	Hectare	389802
9	Net Area Sown	2012-13	Hectare	706090

Source: Uttarakhand at a Glance (2014-15), Govt. of Directorate of Economics and Statistics.

J. Health

111. The Infant Mortality Rate is 36 and Maternal Mortality Ratio is 359 (SRS 2007 - 2009) which are higher than the National average. The Sex Ratio in the State is 963 (as compared to 940 for the country). The comparative figures of major health and demographic indicators are shown in **Table IV-15**.

Table IV-15: Demographic, Socio-economic and Health Profile of Uttarakhand as compared to India Figures

S. No.	Indicator	Uttarakhand	India
1.	Total Population (In Crore: Census 2011)	1.01	121.01
2.	Decadal Growth (in %: Census 2011)	19.17	17.64
3.	Crude Birth Rate (SRS 2011)	18.9	21.8
4.	Crude Death Rate (SRS 2011)	6.2	7.1
5.	Natural Growth Rate (SRS 2011)	12.8	14.7
6.	Infant Mortality Rate (SRS 2011)	36	44
7.	Maternal Mortality Rate (SRS 2007-08)	359	212
8.	Total Fertility Rate (SRS 2011)	NA	2.4
9.	Sex Ratio (Census 2011)	963	940
10.	Child Sex Ratio (Census 2011)	886	914
11.	Schedule Caste Population (in Crore: Census 2001)	0.15	16.67
12.	Schedule Tribe population (In crore: Census 2001)	0.02	8.43
13.	Total Literacy Rate (in %: Census 2011)	79.63	74.04
14.	Male Literacy Rate (in %: Census 2011)	88.33	82.14
15.	Female Literacy Rate (in %: Census 2011)	70.70	65.46

Source: RHS Bulletin, March 2012, MO Health & F.W., GOI.

112. The health infrastructure of the State is described in succeeding Table. There are only 14 Obstetricians/Gynaecologists and 20 Pediatricians in the State. Such numbers are way below the estimated State requirement of 59 each. Some of the essential requirements of the new State include basic primary health care, pre and post-natal care, and nutritional status and preventive care. Accessibility to health services with the aid of improved road conditions is essential to put progress in the health indicators of the State. These health infrastructures have been described in **Table IV-16**.

Table IV-16: Health Infrastructure of Uttarakhand

Indicators	Required	In Position	Shortfall
Sub-centre	2341	1848	493
Primary Health Centre	351	257	94

Indicators	Required	In Position	Shortfall
Community Health Centre	87	59	28
Health worker (Female)/ANM at Sub Centres & PHCs	2105	2016	*
Health Worker (Male) at Sub Centres	1848	184	1664
Health Assistant (Female)/LHV at PHCs	257	88	169
Health Assistant (Male) at PHCs	257	29	228
Doctor at PHCs	257	205	52
Obstetricians & Gynecologists at CHCs	59	14	45
Pediatricians at CHCs	59	20	39
Total specialists at CHCs	236	51	185
Radiographers at CHCs	59	17	42
Pharmacist at PHCs & CHCs	316	292	24
Laboratory Technicians at PHCs & CHCs	316	81	235
Nursing Staff at PHCs & CHCs	670	243	427

Source: RHS Bulletin, March 2012, MO Health & F.W., GOI.

K. Literacy

113. As per census data of 2011, the literacy rate of the Uttarakhand was 79.63% with 88.33% literacy for males and 70.70% literacy for female. In Uttarakhand, there are 15331 primary schools with 1040139 students and 22118 working teachers as per census 2011.

L. Cultural and Archeological Resources

114. The State of Uttarakhand has a great range of cultural practices. Festivals and cultural activities are being celebrated throughout the year in the State. The major fairs and festivals of the Garhwal region include the Hatkalika Fair, Tapkeshwar Fair, Surkhanda Devi Fair, Kunjapuri Fair, Lakhawar Village Fair, and Mata Murti Ka Mela. On the other hand, major fairs and festivals in the Kumaon region consist of Uttarayani Mela, Shraavan Mela (Jageshwar), Kartik Purnima at Dwarahat, Kasar Devi Fair, and Nanda Devi Fair.
115. Living in the mountains mostly in places that are not easily accessible the people of the district have been able to preserve their culture, folk lore, folk songs and folk dances, the last, a distinctive feature of the Uttarakhand district, being seasonal, traditional and religious, some of the better known being described below:
- *The Thadiya dance, which is accompanied by song, is performed on Basant Panchami, the festival celebrating the advent of spring. Another dance, is performed on Deepawali and the Pandava Nritya during the winter after harvesting of crop and depicts the principal events of the Mahabharata.*
 - *Other folk dances are Jeetu Bhagdawal and Jagar or Ghariyali. These dances enact mythological stories, the participants, both men and women, put on their traditional colorful dress and dance to the tune of drums and Ransinghas.*
 - *One of the important dance performed during the fairs and accompanied by song is called Chanchari or Jhoda in which both men and women participate.*
116. Folk songs are usually traditional and are sung particularly by the woman, who works very hard in the fields from morning till night in all kind of weather. During the month of Chaitra the women of the village gather at a central place and sing traditional song which generally relates deeds of heroism, love and the hard life which they have to lead in the hills. In the district, fairs, festivals, religious and social gatherings are the main occasions for recreation and amusement. On special occasions people arrange Swangs (open air dramatic performances) particularly depicting scenes or legends connected with Shiva and Parvati.

117. The houses in the hilly areas of Uttarakhand do not build according to any town planning scheme but have been built up haphazardly in clusters on level ground at places where water springs are accessible or on the bank of the river in the valleys. The houses are built of stones and are generally double storeyed, a few having three to five storeys, the very low rooms on the ground floor, which are usually 1.8 meters high being used for housing the cattle. Each house has in front of it a courtyard called a Chauk. A mud or stone staircase or a wooden ladder leads to the upper storey, the roof being of wood and stone. The height of the upper storey is generally 2.1 m and the roof is usually a sloping structure of timber covered with Patals (quartzite slabs), the well off use corrugated galvanized iron sheets. Generally the upper storey has a Verandah in front of the upper rooms.
118. The houses in the higher regions are two to three storeys with balconies all round and paved courtyard in front where people do their threshing, weaving, spinning and other household works. A few houses have five or six storeys, the top most being used as the kitchen. At times the cattle sheds are made at some distance from the villages. The houses are built in rows of half a dozen or so and strikingly picturesque in their fort like appearance.
119. The staple food grains consumed by the people are *Triticum aestivum* (wheat), *Oryza sativa* (rice), *Zea mays* (maize), *Eleusine coracana* (Mandua) and *Echinochloa frumentacea* (Jhanjora), the last three being coarse grains generally eaten by the poorer sections. The pulses consumed are urad, gahat, bhatt, soontha, tur, lobia and masor. The Hindus of the district mostly vegetarian by habit and preference and although the Muslims, Christians and Sikhs are generally non-vegetarian, those not able to afford eating meat daily due to money or local unavailability often resulting to a vegetarian diet.

M. Economic Development

1. Transportation and Communication

120. Transportation system is a key factor in the socio-economic development of any area. Roads are logically the critical inputs to the growth of all the sectors. Aside from road systems, the State of Uttarakhand is connected to other states via rail and air transportation systems. Dehradun, Haridwar and Kathgodam are the major railway stations connected to various parts of the country. Jolly Grant near Dehradun is the lone airport present in the State.
121. As per statistical diary of Uttarakhand 2011-2012, the overall road network in the State is 337486.92 km. The road network is administered predominantly by the PWD and comprises of 1375.76 km of national highways (NH) 3788.20 km of State Highways (SH), 3289.74 km of Major District Roads (MDR), 2,945.04 km of Other District Roads (ODR), 14543 km of Village Roads (VR) 858.85 light vehicle road (LVR). Other than PWD, Irrigation department (741 km), Cane development Department (885 km), Forest Department (3257 km), Border Road Task Force (BRTF) 1281.32 Km and others like Mandi Parishad/Market council and PMGSY road (1685 km) a total 7849.32 km road is also managed by their respective department. The Border Roads Organization manages about 1,623 km of NHs, SHs, MDRs, and ODRs (class 9 equivalent and above roads having carriage way width 3.75 meter and above).
122. Density of road length per 100 sq. Km. is 45 km which is very low compared to the national average of 97 km. Only about seven percent of the roads in the State are built in two-lane standards while 50 percent are paved. About a third of the higher class paved roads are in poor condition and over 70 percent of the light-vehicle roads need to be repaired or rehabilitated. Due to the lack of road connectivity, vast areas of the State are inaccessible. Such problem influences the population to 'chunk' in far flung areas of the

State remaining to be under-developed and devoid of educational and health facilities and employment opportunities.

123. As per PWD records, the **Table IV-17** give the scenario of roads in Uttarakhand state.

Table IV-17: Transportation in Uttarakhand State

Sl. No.	Items	Year/Period	Unit	Statistics
(A)	Motor Roads Maintained by PWD			
	(i) National Highways	2013-14	Km.	1375.76
	(ii) State Highways	2013-14	Km.	3782.24
	(iii) Major District Roads	2013-14	Km.	3289.74
	(iv) Other District Roads	2013-14	Km.	2985.27
	(v) Rural Roads	2013-14	Km.	16177.16
	(vi) L.V. Roads	2013-14	Km.	790.38
(B)	Motor Roads Maintained by BRTF			
	(i) Total Length of Roads	2013-14	Km.	1281.32
(C)	Motor Roads Maintained by Local Bodies			
	(i) District Panchayats	2013-14	Km.	807.60
	(ii) Urban Local Bodies & Others	2013-14	Km.	2356.13
(D)	Roads Maintained by Other Departments			
	(i) Irrigation	2013-14	Km.	741
	(ii) Cane Development	2013-14	Km.	850.12
	(iii) Forest	2013-14	Km.	3270
	(iv) Others	2013-14	Km.	2060.21
(E)	Postal and Communication Services			
	(i) Post Offices	2013-14	No.	2719
	(ii) Telephone Exchanges	2013-14	No.	473
	(iii) Telegraph Offices	2013-14	No.	0
	(iv) PGOs	2013-14	No.	5275
	(v) Telephone Connections (Including WLL) by BSNL	2013-14	No.	195855
	(vi) Mobile phone by BSNL	2013-14	No.	902096

Source: Uttarakhand at a Glance (2014-15), Directorate of Economics and Statistics, GoU.

2. Industrial Development

124. The State has finite industrial units due to lack of adequate resources. In the hilly terrains, industries included food processing, fruit processing, medicinal and aromatic plants, and floriculture based industries. In the plain Districts like Haridwar, Udham Singh Nagar, and other places, capital intensive and high-value addition industries are being encouraged by the government.

125. In recent years, Uttarakhand has emerged as one of the most attractive industrial destinations in India. In this regard, the government is encouraging private participation in all industrial activities in the State. The New Industrial Policy announced in 2003 by the State government puts in place the regulatory framework for Uttarakhand's industrialisation. The New Industrial Policy indicates that private resources may be tapped while promoting integrated Industrial States in Uttarakhand. The State Government provides assistance for establishment of small and medium sized agro-parks, food-parks, which in turn are expected to provide common infrastructure facilities for storage, processing, grading, and marketing.

126. Main and traditional business of the state is, Handicrafts, Handlooms, Wool Based Industries, Khadi and Village Industries. Hydro Power, Tourism are the backbone of

economic development of the state. No recognizable industry is located in close proximity of the sub-project sites.

N. Energy and Electric Power Potential

127. Uttarakhand has an estimated hydro power potential of about 20,200 MW. However, only 1,130 MW has been tapped at present. Mean while, 4,170 MW projects are under implementation and 3,800 MW projects are allotted to Central, State and private sectors. About 39 projects with a potential of 6,374 MW have been identified for PFR under PMS Hydro Initiatives.
128. Although, Uttarakhand is a power surplus State, a lot needs to be done to harness the untapped potential and sale the surplus power to make this a GDP driver sector for the State.

O. Aesthetic and Tourism

129. Tourism is one of the strong pillars of the State economy. The State has high growth potential for tourism, be in nature, wildlife, adventure or pilgrimage tourism. The State received 2,05,46, 323 domestic tourists in the year 2008, 2,19,34, 567 in the year 2009 and 3,02,06, 030 in the year 2010. As per Uttarakhand at a Glance 2012-13 a document issued by Directorate of Economic and Statistics GoU state received 5,69,250 tourists in the year 2011-2012 registering a considerable yearly growth. Expenditure on schemes for tourism development and promotion in the State has progressively increased over the years. Some of the major destinations with tourism potential include Haridwar (called 'The Gateway of God'), Rishikesh (the birth place of Yoga), Dehradun, Mussoorie, Almora, Kedarnath, Badrinath, Yamunotri, Gangotri, Jim Corbett National Park, Nainital, Ranikhet, and Pithoragarh.
130. In respect to tourism major tourist destination in Uttarakhand are Devprayag, Khatling Glacier, Narendra Nagar, Sem Mukhem, Chamba, Dhanaulti, Kunjapuri, New Tehri, Surkanda Devi, Chandrabadni, Kemtoy Fall, Nagtibba etc.

V. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

131. The sub-project was screened using the ADB's rapid environmental assessment (REA) checklist.
- The individual environmental screening checklist is provided in Appendix B of this report.
 - **Environmental impacts related to siting.** The proposed sub-projects are not expected to have any impact on the Forests. Not a single site is located within or adjacent to the cultural heritage site, protected area (national park / sanctuary / biosphere reserve), wetland, mangrove, estuarine, buffer zone of protected area or special area for protecting biodiversity. There are no rare, threatened, and endangered species (flora and fauna) available or observed within the subproject corridor of impact.

A. Land Acquisition and Resettlement

132. Most of the proposed sub-project locations exist are within the revenue lands as per Government record. There are no critical impacts on agriculture land and resettlement of people as well as dismantling of any structure during land acquisition or due to the proposed sub-project components.
133. The District-wise list of locations as per the land availability with ownership status was finalized after site visited by the Social Experts of PIU & PMU (JEAP: ADB).
134. Due to tough and risky hilly terrain, flat land is the major crisis in Uttarakhand. Most of the land belongs to the State Forest Department or surrounded by restricted areas such as reserve forests, protected areas, ecosensitive zones etc., which is again a major time taking process to get forest clearances. Keeping this fact in mind the land available with Revenue and Tourism department is selected for this purpose. There is no case of private land acquisition.
135. There is no resettlement issue envisaged in case of all twelve sub-project locations. Since there is no encroachment noticed during site visit, also there is no livelihood loss of the community due to commencement of civil work. A consolidated 'Social Due Diligence Report' will be prepared separately for all twelve sub-project locations as per ADB's Safeguard Policy Statement, 2009.

B. Environmental Impacts

136. The assessment of environmental impacts due to the implementation of these sub-projects has been carried out for potential impacts during the following stages of the project planning and implementation:
1. **Location Impacts:** Impacts associated with site selection, including impacts on environment and resettlement or livelihood related impacts on communities.
 2. **Design Impacts and Pre-Construction Impacts:** Impacts arising from the inappropriate designs of proposed activities would in general include the inadequate drainage provisions, contemporary designs for the traditional and cultural environment etc. Selection of materials, if not carefully chosen, will adversely impact the aesthetic appeal of the surroundings. The results of interventions are unobtrusive and will be integral part of the overall ambience so as to avoid impacts on the aesthetic beauty of the proposed site. All component designs will be worked out to minimize any impacts on the adjoining properties, and considering the drainage and sewerage connections on the road. Given that there is a need for disposal of construction wastes. The contractors will be required to consult with the

Project Implementation Unit under PMU/UEAP: ADB for safe disposal sites.

3. **Construction Impacts:** The impacts are generic to the construction activities, in all sub-project locations. All construction activities to be undertaken at the site will be approved by competent authority before start of any such activity in the vicinity of the site so that the history and sanctity as well as the usability of the site are not hampered. Hence, the EMMP emphasizes on the construction impacts and necessary mitigation measures to be strictly followed by the contractor and to be supervised by the Design and Supervision Consultant (DSC). Key impacts during construction are envisaged on the following aspects: (i) Drainage, (ii) Quarry and borrow pit operations, (iii) Slope cutting and their stability (iv) Water bodies and drainage system (v) Dust generation, air and noise from construction activities, (vi) handling of construction materials at site, (vii) Adoption of safety measures during construction; and (viii) Community health and safety measures.
4. **Operation and Maintenance Impacts:** Impacts associated with the operation and maintenance of proposed helipads and buildings built under project. Impacts during operation of the helipads and buildings established in the sub-project will be due to lack of appropriate maintenance facilities created including the sites around the helipads, toilets, parking facilities apart from drainage and solid waste management of the tourist destinations. These impacts are proposed to be addressed through provisions of water and waste management and orientation of the Tourist facility owners in management and operation of such facilities including collection of wastes, operation of toilet facilities, timely clean-up of waste disposed by the tourists and aesthetics through appropriate maintenance of landscaping.

C. Cumulative Environmental Impact Assessment

137. The cumulative environmental impact assessment (CEIA) examined the interaction between the sub-project's residual effects (i.e., those effects that remain after mitigation measures have been applied) and those associated with other past, existing and reasonably foreseeable future projects or activities.
138. Since the sub-projects will be built in existing government owned land, and areas to be developed as helipad especially for emergency period. Site specific mitigation measures will be implemented during construction to address temporary disruptions to land use, limitations on access to roads, sidewalk closures, parking modifications, and increased volumes of construction related traffic. During operations of the facilities, added residential developments, commercial and business facilities increased densities are expected to develop and enhance the sub-project area. This can be considered a long-term cumulative benefit of the sub-project.
139. Increased tourist influx is expected to impact on environment but at the same time the routes to these destinations are open for a limited time with limited number of tourists. As the locations are mainly en route to pilgrim centres, it is used by trekkers and adventure lovers, who have a different mind set towards outdoors and love for nature. This will be further addressed by the project through regular orientation programs designed both for the tourists and facility providers, and dissemination of awareness material highlighting the environmental importance of the area.
140. Implementation of the project will not have any bearing on ecology and environment of the locality. The subproject will not involve any displacement of people or disruption of any economic activity such as agriculture land etc. The design and constructions are consistent with the surrounding landscape. The project will not influence the flora or fauna of the locality in any way.

VI. INFORMATION DISCLOSURE, CONSULTATION AND PARTICIPATION

141. The information disclosure, public consultation at sub-project locations and stakeholder analysis are very significant tasks under any project for proper understanding and transparency in proposed project.

A. Public Participation during Preparation of IEE Report

142. The public consultation and participation includes identification of project affected persons (PAPs) and other interested groups or parties (stakeholders). Informing and providing the stakeholders with sufficient background and technical information regarding the proposed developmental activities; creating opportunities and mechanisms where by they can participate and raise their view points (issues, comments and concerns) with regard to the proposed development; giving the stakeholders feedback on process findings and recommendations; and ensuring compliance to process requirements with regards to the environmental and related legislation.
143. Stakeholder consultation and participation with various stakeholders is an integral part of the environmental and social impact assessment and also part of regulatory requirement of EIA Notification, 2006 and ADB requirements (Safeguard Policy Statement, 2009). The stakeholders of the project include project affected communities and institutional stakeholders such as local bodies, and other line department (Revenue, Forest, Environment etc.). The consultations at micro-level (village level) and macro-level (District/State level institutional consultations) helped planners to integrate the short term and long terms requirements of the local, regional, state and national goals in to the planning process.
144. During Project preparation and consultations with the Executing Agency (EA), Implementation Agency (IA), District Administration and other agencies at local levels on selection of sub-projects and identification of key issues including addressing the current gaps in provision of basic services like approach road to access the proposed helipad site. The outputs of public consultation during site visits have been summarized below for timely and effective implementation of the project.

Outputs of Public Consultation during Site Visits (19th May to 25th May, 2014; 12th to 13th August, 2014 and 23rd June to 28th June, 2015)	
Name of the Places	: Sub-Projects sites at Agastyamuni (GIC), Barkot (Civil Aviation), Manera (Sports stadium), Kotdwar Srinagar (ITI Ground), Ukhimath (GIC), Tyuni (Batal Basti), Lansdwone.
District	: Rudraprayag, Pauri Garhwal, Uttarkashi and Dehradun
Period	: 19 th May to 25 th May, 2014; 12 th to 13 th August, 2014 and 23 rd June to 28 th June, 2015
Participants	: Villagers, Shopkeepers and other Line Departments etc.
1. Issues discussed:	
<ul style="list-style-type: none">• Importance of site selection for MPH of Helipads and its suitability• Benefits of Helipads and related MPH during natural disaster for evacuation and relief i.e. for emergency purposes.• Issue of site related NOC and related environmental and social concerns• Area specific socio-economic and environmental problems.• Local issues of Panchayat and development schemes.• Land ownership and provision of compensation.• Scope of local employment generation during construction.	

2. Stakeholder's Response:

- Local people are aware and agree for construction of MPH for helipads for emergency purposes.
- The approach to the helipad site should be constructed in proper way so that it can easily be accessible.
- Permanent caretaker should be provided so that he can take proper care and maintenance of the helipad.
- Local Panchayat has no objection in construction of MPH for helipads.
- During construction employment should be given to the local people.
- Safety issues should be provided to the Helipads that are constructed in the Government Institutions ground.
- Beautification of these Institutions ground should be in design provision and should be undertaken during construction.

3. Recommendation and Suggestions:

- Illegal cutting of trees and disturbance to wildlife should be strictly avoided.
- Take care of natural resources along with proper disposal of wastes to be generated during construction and upgradation of helipads.
- Due care should be taken in selection of trees for cutting and minimum number of trees should be cut for conservation of local ecosystem.
- Horns should be blown on blind curve on approach roads to helipads during passing of heavy machineries and vehicles.
- Speed breakers to be established on blind curves of approach roads to helipads and settlement areas etc. for control of road accidents.
- Approaches to the helipad should be properly constructed so that during the time of emergency it can be easily accessible.
- Side drains and crossways for escape of rain water are required. Proper drainage is required for water during rainy season.
- Efforts should be taken for generation of employment of local people during construction.

B. Future Consultations and Disclosure

145. The public consultation and disclosure program will remain a continuous process throughout the sub-projects to resolve the issues which may be raised at any stage (pre-construction, construction and operational stages).

C. Consultation during Detailed Design

146. Focus-group discussions (FGD) with affected persons and other stakeholders to hear their views and concerns, so that these can be addressed in sub-project design wherever necessary. Regular updates on the environmental component of the sub-project will be kept available at the PIU established under PMU (UEAP: ADB).

147. Either PIU or PMU (UEAP: ADB) will conduct information dissemination sessions at major intersections and solicit the help of the local community leaders/prominent citizens to encourage the participation of the people to discuss various environmental issues.

148. The PIU or PMU (UEAP: ADB) with assistance of Design Supervision Consultant (DSC) will conduct information dissemination sessions in the sub-project area. During EMP implementation PIU, DSC, and PMU shall organize public meetings and will appraise the communities about the progress on the implementation of EMP in the sub-project works.

D. Consultation during Construction

149. Public meetings with affected communities (if any) to discuss and plan work programs and allow issues to be raised and addressed once construction has started.
150. Small scale meetings to discuss and plan construction work with local communities to reduce disturbance and other impacts, and provide a mechanism through which stakeholders can participate in sub-project monitoring and evaluation.

E. Project Disclosure

151. After getting all clearance and final designing of the sub-projects, all details related to be project will be disclosure on the websites by the Executing Agency (SDMA or PMU) and ADB. The local communities will be continuously consulted regarding location of alternatives, construction camps, access to site and other likely disturbances which may raised during construction. Attendance sheet and photographs of Public Consultation are given in **Appendices – D & E** respectively.
152. For the benefits of the community, the IEE will be disclosed to the affected people and other stakeholders in a form and language(s) understandable to them at an accessible place in a timely manner and made available at: (i) PIU and PMU (UEAP: ADB) Office; (ii) District Magistrate Office; and, (iii) Design & Supervision Consultant (DSC) Office. It will be ensured that the hard copies of IEE are kept at such places which are conveniently accessible to citizens as a means to disclose the document and at the same time create awareness among general public. Electronic version of the IEE will be placed in the official website of the SDMA or PMU (UEAP: ADB) and the official website of ADB after approval of the IEE by ADB. The PIU will issue notification on the locality-wise start date of implementation of the sub-project. Copies of the IEE will be kept in the PIU and PMU (UEAP: ADB) Office and will be distributed to any person willing to consult the IEE.

VII. ENVIRONMENTAL MANAGEMENT PLAN & GRIEVANCE REDRESS MECHANISM

A. Institutional Arrangement

153. The institutional arrangements specify the arrangements for the implementation of environmental provisions of the proposed sub-projects. The Executing Agency (EA) - State Disaster Management Authority (SDMA) will work closely with Project Management Unit (PMU: UEAP-ADB). The PMU (UEAP: ADB) is responsible for effective implementation of environmental safeguards related to the requirements of the civil aviation infrastructure sub-projects. The detailed institutional arrangement and other responsibilities have been described below.

- The sub-project will be implemented and monitored by PIU (UEAP: ADB), which will be supported by Design and Supervision Consultant (DSC) and overall management support shall be provided by PMU (UEAP: ADB).
- The safeguard specialists of PMU (UEAP: ADB), and PIU (UEAP: ADB) will monitor and support the implementation programme of environmental covenants with assistance of Design and Supervision Consultant (DSC).
- The Executing Agency - PMU (UEAP: ADB) shall be responsible for ensuring compliance to environmental requirements of the ADB as well as central and state Governments and reporting the same to ADB an environmental management and monitoring plan (EMMP) will be a part of contract with the civil works contractors engaged for execution of the works. The primary responsibility of implementation of EMMP is of Executing Agency - PMU (UEAP: ADB) during pre-construction and operation and maintenance phases; and of the civil works contractor during the construction phase as defined in the EMMP.
- The responsibility of supervision of EMMP implementation is of the DSC; and it would guide the Implementation Agency (IA) and the civil works contractors in this regard. All applicable statutory clearances including environmental clearances, forest clearances, consents and permits or No-Objection Certificate (NOC) from National, State and Local levels to be required atleast 2 month before commencement of civil works at sub-project locations by the civil works contractor or project proponent in line with india's National, State and Local laws and regulations and in accordance with ADB's Safeguard Policy Staement 2009 requirements.

1. Executing Agency (EA): State Disaster Management Authority (SDMA) -Project Management Unit (UEAP: ADB)

- The Executing Agency complies with all applicable legislations and its conversant with the requirements of the EMMP.
- To assesses all activities requiring special attention as specified or requested by the Design and Supervision Consultant (DSC) or safeguards specialist of Project Management Unit (UEAP: ADB).
- On the recommendation of the Environmental Expert (EE), Design and Supervision Consultant (DSC) and Safeguards Specialist of Project Management Unit (UEAP: ADB) through the DSC order, the contractor to suspend any or all works on site if the contractor or his sub-contractors or suppliers fail to comply with the said contractual stipulations with respect to environment and EMMP.
- To ensures along with the Design and Supervision Consultant (DSC) that EMMP and all necessary environmental stipulations are carried in bidding documents and contract documents of the contractor.

- Addressing of complaints and redressal of grievances for the project.

2. Implementation Agency (IA): Project Implementation Unit (Civil Aviation Depatt)

- Complies with all applicable legislation and is conversant with the requirements of the EMMP.
- To assesses all activities requiring special attention as specified or requested by the Design and Supervision Consultant (DSC) or safeguards specialist of Project Management Unit (UEAP: ADB) for the duration of the contract.
- To ensures that the contractor conducts all activities in a manner that minimizes disturbance to directly affected residents and the public in general, as advised by the engineers of DSC or Safeguards Specialist of PMU (UEAP: ADB).
- Act as supervising & monitoring agency as delegated in EMMP.

3. Design and Supervision Consultant (DSC)

- To guides PMU (UEAP: ADB), PIU (UEAP: ADB) and contractors with respect to environmental regulations and associated requirements, and facilitates ensuring compliance with those.
- Arranges information meetings for and consults with interested and affected parties about the impending construction activities;
- Maintains a register of complaints and queries by members of the public at the site office. This register may be forwarded to the project manager of PIU (UEAP: ADB) on weekly basis.
- To enforces and monitors compliance the requirements of the EMMP at project site.
- To assess the contractor's environmental performance in consultation with environmental expert.
- Documents in conjunction with the contractor, the state of the site prior to commencing construction activities.

4. Environmental Expert of Engineering (DSC)

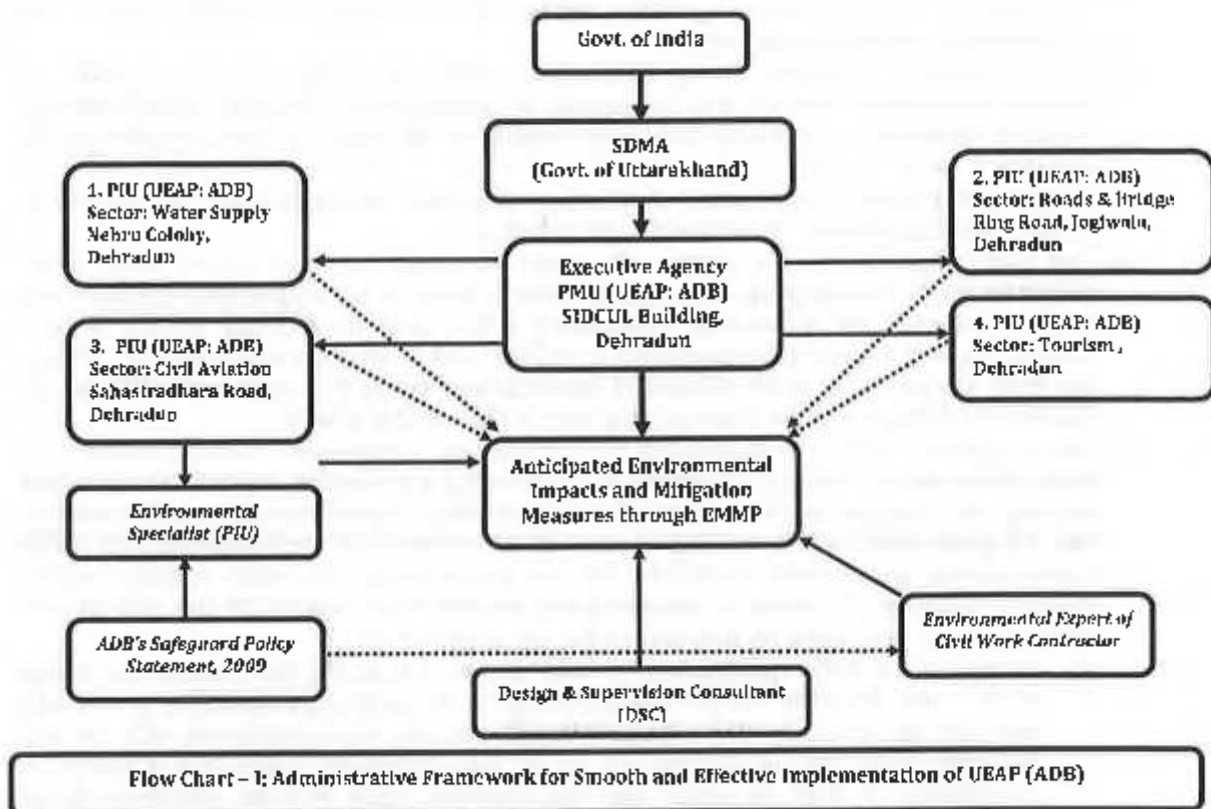
- Briefs the contractor about the requirements of the environmental specification and EMMP as applicable.
- To facilitate the statutory compliances related to civil works to PIU (UEAP: ADB) and contractors.
- To advise the engineer about the interpretation, implementation and enforcement of the environmental specification and other related environmental matters.
- Monitors and report on the performance of the project in terms of environmental compliances with the EMMP to the DSC, PMU and PIU and provides technical advice relating to environmental issues to the engineer.

5. Civil Work Contractor

- To depute a full time suitable, qualified and experienced environmental safeguard Specialist for the effective implementation of EMMP at project site including environment health & safety (EHS) measures, community liasoning, reporting and grievance redressal on day to day basis.
- Complies with all applicable legislation, is conversant with the requirements of the EMMP, and briefs staff about the requirements of same.

- ◆ To ensure any sub-contractors or suppliers, who are utilized within the context of the contract comply with the environmental requirements of the EMMP. The contractor will be responsible for non-compliance on their behalf.
- Provides environmental awareness training to staff.
- To bears the costs of any damages or compensation resulting from non-adherence to the EMMP or written site instructions.
- To conducts all activities in a manner that minimizes disturbance to directly affected residents and the public in general, and foreseeable impacts on the environment.
- To ensures that the engineer is timely informed of any foreseeable activities that will require input from the environmental expert of DSC.
- To receive complaints/grievances from public, discuss with DSC and PIU and take necessary steps for implementation of remedial measures in consultation with the engineer of DSC and report to the executive Agency on the status in its each monthly report till satisfactory resolution.
- The proposed sub-project will be implemented by the f-piu, tourism (grmvh). the f-piu will be responsible for supervision and monitoring of day-to-day implementation of sub-projects including EMMP.
- For monitoring of environmental parameters as outlined in the EMMP, appropriate monitoring agencies would be engaged by the contractor (cost has been included in each contract package based on the sub-project specific monitoring programme) or by the IA for the monitoring works, if not included in the civil works contracts.
- The flow chart of various sectors under PIUs (ADB) of "Uttarakhand Emergency Assistance Project (Funded by ADB) is given below.

**ASIAN DEVELOPMENT BANK
(ADB)**



B. Environmental Management Plan (EMP)

154. The "Environmental Management Plan" (EMP) is a key to ensure a safe and clean environment. The desired results of mitigation measures may not be achieved without unless formulations of a proper management plan and its effective implementation. The EMP envisages a plan for sound environmental management practices and the proposed mitigation measures (i.e. generic and sub-project specific) may reduce the potential impacts due to the project activities. Based on the existing baseline environmental condition of the sub-project locations, through site survey, various project activities during preconstruction, construction and operation phases of the project, environmental checklist as per the ADB's guidelines environmental impacts are anticipated. The mitigation measures are suggested to minimize the impact. The project activities considered during improvement stage are location of construction camp, obtaining appropriate clearances from regulatory bodies' prior executing construction work, and determination of safety measures.
155. The environmental impacts during construction stage are temporary and reversible in nature. Important project activities considered are establishment of labor camps, removal of some herbaceous and bushy vegetation, cutting of hill slopes to some extent may be envisaged, borrow and quarry operation, crushing of stones and transportation of construction material, construction of drainage channels, and operational movements of construction equipments, vehicles and water supply etc.
156. The EMP designed for the project will guide the environmentally-sound construction practices under sub-projects and ensure efficient lines of communication between the proposed design and supervision consultants (DSC) also an engineer for the project, contractors, and Project Implementation Unit (PIU) and Project Management Unit (PMU). The EMP identifies the three phases of development as: (i) Pre-construction Phase (ii) Construction Phase and (iii) Post-construction or Operational Phase.
157. The purpose of EMP is to ensure that the activities are undertaken in a responsible non-detrimental manner with the objectives of: (i) providing a pro-active, feasible and practical working tool to enable the measurement and monitoring of environmental performance on site; (ii) guide and control the implementation of findings and recommendations of the environmental assessment conducted for the sub-projects; (iii) detail specific actions deemed necessary to assist in mitigating the environmental impact of the sub-project; and (iv) ensure that safety recommendations are complied with.
- A copy of the EMP must be kept at each project site during the construction period at all times. The EMP will be made binding on all contractors operating on the site and will be included within the contractual clauses. Non-compliance with, or any deviation from, the conditions set out in this document constitutes a failure in compliance. It shall be noted that the Supreme Court of India mandates those responsible for environmental damage must pay the repair costs both to the environment and human health and the preventive measures to reduce or prevent further pollution and environmental damages.
- All works undertaken towards protection of environmental resources as part of the EMMP and as part of good engineering practices while adhering to relevant specifications will be deemed to be incidental to works being carried out and no separate payment will be made unless otherwise specified explicitly. The costs towards environmental management as per EMMP unless otherwise provided as a separate head, will be deemed to be part of the BOQ of the project. The scope of works of the contractor towards the implementation of the environmental provisions shall be as follows:
- Abide by all existing environmental regulations and requirements of the Govt. of

Uttarakhand and Govt. of India, local levels and gram sabha etc. during sub-project implementation.

- Compliance with all mitigation measures and monitoring requirements set out in the EMMP.
- Submission of a method statement detailing how the sub-project EMMP will be complied with this shall include methods and schedules of monitoring.
- Monitoring of project environmental performance including performance indicators defined therein, and periodic submission of monitoring reports.
- Compliance with all measures required for construction activities in sensitive areas, in line with the regulatory requirements of these protected areas, and the guidelines set forth in the management plans for these areas.
- Compliance with all regulatory requirements associated with proximity of the sub-project to the international borders based on assessment of contractor in consultation with the engineer of DSC.
- Compliance of all safety rules and regulations applicable at work, and provision of adequate health and safety measures such as water, food, sanitation, personal protective equipment, workers insurance, and medical facilities besides all social and community related requirements as stipulated in EMMP.

158. The detailed provisions for specific environmental issues are outlined in the EMMP table of impacts and mitigation measures. The key clauses are outlined in the following sections.

- **Quarry and Borrowing**

- ✓ The contractor will identify and seek prior approval of the engineer for quarrying and borrowing operations. The quarry and borrowing will be carried only from locations approved by the Department of Geology & Mining (if required). Any deviation from the provisions will be immediately notified and approval of the engineer is to be sought.
- ✓ The contractor shall maintain all borrow sites, stockpiles and spoil disposal areas so as to assure the stability and safety of the works and that any adjacent feature like houses and community assets especially along hill slopes are not endangered, and to assure free and efficient natural and artificial drainage, and to prevent erosion. Stockpiling of materials (top soil, fill material, gravel, aggregates and other construction materials) shall not be allowed during rainy season unless covered by a suitable material. The storage on private property will be allowed if written permission is obtained from the owner or authorized party.
- ✓ Borrow areas and quarries shall be sited, worked, and restored in accordance with the specifications and as per the closure plan (approved by engineer). Spoils shall be disposed of at approved disposal sites prepared, filled, and restored in accordance with the related specification requirements.

- **Debris Disposal**

- ✓ The dismantling of existing structures: debris disposal shall be maximum utilized and disposed as per norms after consultation with DSC, PIU and PMU's Safeguard Specialist. Due care shall be taken that any material falling under hazardous waste category is disposed in accordance with

the Hazardous Wastes (management, handling and transboundary movement) Rules, 2008 and amendments till date Hazardous Wastes (management, handling and transboundary movement) Rules, 2008 and its amendments till date and applicable norms.

- **Precautions for Protection of Environmental Measures**

- ✓ The contractor shall ensure that construction activities do not result in any contamination of land, air or water by polluting substances or cause noise generated by the activities and for cleaning activities and operation of equipments, the contractor will utilize such practical methods and devices as are reasonably available to control, prevent and otherwise minimize air and noise pollution effectively.
- ✓ The contractor shall ensure that no trees or shrubs or other vegetation are felled or harmed except those required to be cleared for execution of the works for which all statutory permissions have been obtained.
- ✓ The contractor shall protect trees and vegetation from damage to the satisfaction of the engineer (DSC).

- **Air, Water, and Noise Pollution, and Soil Contamination**

- ✓ All works will be carried out without unreasonable noise and air, water and soil pollution subject and without prejudice to any other provision of the contract and the law of the land and its obligation as applicable.
- ✓ The contractor will take all precautions outlined in the EMMP to avoid the air, water, soil and noise pollution.
- ✓ The contractor shall monitor the environmental parameters periodically as specified in the monitoring plan and report to the engineer of DSC and PIU/PMU (UEAP: ADB) in the form of monthly progress report and after one year a consolidated report to be submitted by PMU (UEAP: ADB) to the funding agency (ADB).
- ✓ The contractor shall reduce the dust emission due to construction activities by regular water sprinkling nearby project affected areas.
- ✓ All the construction equipments and vehicles shall have Pollution under Control (PUC) certificate to ensure that no air pollution is caused due to operation of their equipments and vehicles.
- ✓ All the construction equipments and vehicles should remain all time in good conditions up to satisfaction of site engineers.
- ✓ The contractor shall indemnify and keep indemnified the employer from and against any liability for damages on account of noise or other disturbance created while carrying out the work, and from and against all claims, demands, proceedings, damages, costs, charges, and expenses, whatsoever, in regard or in relation to such liability.

- **Occupational and Community Health and Safety during Construction**

The contractor shall, in accordance with the safety and health provisions specified in the EMMP, provide workers with a safe and healthy working environment, in the working areas, through application of preventive and protective measures consistent with international good practices, as reflected in internationally recognized standards. The contractors, engineer (DSC), EA and IA will take steps to prevent

accidents, injury, and disease arising from, associated with, or occurring during the course of work by:

- *Providing preventive and protective measures, including modification, substitution, or elimination of hazardous conditions or substances.*
- *Providing appropriate equipment to minimize risks and requiring and enforcing its use;*
- *Training to workers and other staff; and providing them with appropriate incentives to use and comply with health and safety procedures and protective equipment.*
- *Documenting and reporting occupational accidents, diseases, and incidents having emergency prevention, preparedness, and response arrangements in place.*
- *Provide first aid facilities in all the working sites and workers camps and having qualified first aider to give first aid at the time of any accident. The contractor shall also organize periodic visits by a qualified registered medical practitioner to the site and workers camps, contact information of doctor, availability & location of first aid box shall be displayed in appropriate language both at work site and workers camps.*
- *The contractor should provide safe drinking water, clean eating and resting areas, separate toilets for male and female work force and sufficient amenities at work site and workers camps as per prevalent labour law and EMMP. The contractor will ensure proper sanitation and would provide soak pits and septic tanks for disposal of waste water and sewage.*
- *The contractor should have prepared emergency response plan (to be approved by engineer) with full details and methods of emergency response during any accident and shall have and display the emergency contact numbers at site; and contractor should follow all the applicable rules and regulations for workers related to health and safety.*

The contractor will also ensure that the interests of the community are disturbed to the minimum as envisaged in the EMMP provide barricade, signage and safety information in and around the construction site and also to prevent local people entering into the construction site.

- **Post-construction Clearance**

- ✓ On completion of work, wherever applicable, the contractor shall clear away and remove from the sites all constructional plant, surplus materials, rubbish, scaffoldings, and temporary works of every kind and leave the whole of the sites and works in a clean condition as per agreed redevelopment plan to the satisfaction of the engineer.
- ✓ The construction camp sites and any other sites temporarily occupied during construction shall be cleared as specified in the contract and handed over to the owner. It will be ensured by the contractor that the site handed over is in line with the conditions of temporary acquisition signed by both parties. Contractor would obtain and furnish to PIU a certificate to this effect from the owner.

C. Environmental Monitoring Programme

159. To ensure the effective implementation of mitigation measures and environmental management plan during construction and operation phase of the sub-projects, it is

essential that an effective environmental monitoring plan be followed as given Table below.

160. Monitoring is an essential component for sustainability of any developmental project. It is an integral part of any environmental assessment process. The monitoring program consists of performance Indicators, reporting formats and necessary budgetary provision. The contractors monitoring methods and parameters should be in accordance with the norms prescribed by the Central Pollution Control Board (CPCB) standards for ambient air, water, noise and soil. Indicators and targets for environmental performance are provided in the EMMP.

161. The monitoring will be carried out by the contractor through approved agency accredited by National Accreditation Board for Testing and Calibration Laboratories and will be supervised by the environmental expert of the Design & Supervision Consultant (DSC). The environmental monitoring plan is outlined in the Table given below.

Table VII - 1: Environmental Monitoring Programme

S. No.	Indicators	Parameters to be Monitored	Frequency	Responsibility
I. Pre- Construction Stage				
1.	Legislation, Permits and Agreements	Permissions, /NOCs/Consents other statutory requirement.	Once in Pre-Construction Stage	Civil Work Contractor, DSC, IA & EA
2.	Environmental Baseline Data Generation	Ambient Air Quality, Noise level, Water Quality & Soil characteristics as per parameters outlined in EMMP.	Once in Pre-Construction Stage	Civil Work Contractor
3.	Debris Disposal	Safe disposal of construction wastes including bituminous wastes.	Random checks	Civil Work Contractor
II. Construction Stage				
1.	Legislation, Permits and Agreements	Permissions, / NOCs/Consents other statutory requirement	Continuous	Civil Work Contractor, DSC, IA & EA
2.	Dust Suppression	No. of tankers for water sprinkling, Timing of sprinkling, Location of sprinkling (log books to be maintained)	Random checks	Civil Work Contractor
3.	Ambient Air Quality (AAQ)	RPM, SPM, SO ₂ , NO _x and CO	Once in a Quarter where work is in progress and near sensitive receptors; and at the construction camp sites (except monsoon) for the entire construction period	Civil Work Contractor, to be monitored through approved Monitoring Agency.
4.	Ambient Noise Level	Equivalent Day & Night Time Noise Levels	Once in a quarter where work is in progress and near sensitive receptors during construction stage	Civil Work Contractor, to be monitored through approved Monitoring Agency
5.	Water Quality Monitoring	TDS, TSS, pH, Hardness, BOD and Faecal Coli Form	Once in a quarter where work is in progress and near sensitive receptors	Civil Work Contractor, to be monitored

S. No.	Indicators	Parameters to be Monitored	Frequency	Responsibility
			during construction stage	through approved Monitoring Agency
6.	Soil Testing	Available Nitrogen, Phosphorus, Carbon, heavy metals (including Lead) and Pesticides.	Once in a quarter where work is in progress and near sensitive receptors during construction stage	Civil Work Contractor, to be monitored through approved Monitoring Agency
7.	Heritage Protection (if needed)	Visual inspection of works, compliance with ASI regulations and norms	Continuous	DSC/ASI/PIU
8.	Supply of PPE	Usage of PPE on site, adequacy of equipments.	Continuous	Civil Work Contractor
9.	Establishing Medical Facilities	Access to health facilities for the construction workers	Continuous	Civil Work Contractor
10.	Accident Record	No. of fatal accidents at work site, No. of injuries, No. of disabilities.	Continuous	Civil Work Contractor
11.	Post-construction Clearance of site	Physical field verification and Satisfaction certificate from owner: Whether temporary locations for workers camp, site office, batching plant and other construction locations are restored to pre-project conditions as per approved closure plan	Post-construction	Civil Work Contractor
III. Operation & Maintenance Stage				
1.	Water Quality Monitoring	All parameters as per CPCB standards.	Once in year during operation stage	PMU, SDMA
2.	Disposal of Solid Waste (if any)	Proper disposal of Solid Waste (domestic) generated shall be ensured in accordance with the prevalent norms.	Continuous	Civil Aviation Department
3.	Ambient Air Quality (AAQ)	PM _{2.5} , PM ₁₀ , SO ₂ , NO _x and CO	Once in a Quarter at the MPH site	Civil Aviation Department
4.	Ambient Noise Level	Equivalent Day & Night Time Noise Levels	Once in a quarter at the MPH site	Civil Aviation Department

Note: Budget covered in subsequent cost Table, however, would be finalized based on subproject specific requirements of IEE stage. Contractor will obtain a copy of approved IEE and keep available at construction site and site office(s) for proper implementation of IEE & EMMP.

D. Environmental Budget

162. As part of good engineering practices in the project, there have been several measures as erosion prevention, rehabilitation of borrow areas, safety, signage, provision of temporary drains, etc., the costs for which will be included in the design costs (site development cost) of specific subprojects. Therefore, these items of costs have not been included in the IEE budget. Only those items not covered under budgets for construction are included in the IEE budget.
163. The Contractor's cost for site establishment, preliminary, construction, and defect liability activities will be incorporated into the contract agreements, which will be binding on him for implementation. The air, soil, water quality, and noise level monitoring during construction and defect liability phases will be conducted by the contractor for which provision has been kept in Environmental budget of EMMP.
164. These are small scale construction projects; therefore, it is not expected to cause much significant impacts on ambient air, water, soil and noise levels. The main EMMP cost will arise from monitoring of environmental parameters (air, water, soil and noise level).
165. The costs of water sprinkling for dust suppression and providing personal protective equipment to construction workers shall be borne by contractor as part of conditions of contract. In addition of this, the sources of funds for Mitigation measures during construction stage including monitoring during construction stage are also to be borne by the contractor. These are deemed to be included as part of the contract price amount quoted by the contractor for the works. The costs for generation of baseline data and monitoring shall be borne by the contractor. The locations for baseline data generation & monitoring shall be identified during IEE study. The baseline data will be generated prior to commencing with civil works. The costs of components for monitoring during operation and maintenance stage and the capacity building costs are to be funded by the PMU. The EMMP cost is given below.
166. Most of the mitigation measures require the contractors to adopt good site practice, which should be part of their normal procedures already, so there are unlikely to be major costs associated with this compliance. Only those items not covered under budget for construction are included in the IEE budget. The IEE costs include mitigation, monitoring and capacity building costs. The estimated budget for environmental monitoring and management of sub-projects as per contract packages are presented below:

Table VII-2: EMMP Cost for Construction of Eight MPH Cum Rescue Centres

Sl. No.	Particulars	Stages	Unit	Quantity	Rate (INR)	Cost (INR)*
A.	Legislation, Permits and Agreements	Consent to Establish and Consent to Operate for plants and machinery of the contractor	-	-	-	-
B.	Environmental Baseline Data Generation					
1	Ambient Air Quality monitoring	Pre-Construction	Per Sample	16	15,000	2,40,000
2	Noise Quality monitoring			18	5,000	90,000
3	Water Quality monitoring			8	9,200	73,600
4	Soil			8	8,000	64,000
5	Dust Suppression at sub-project sites	Construction and defect liability phases	Rs. (Lump sum)		2,00,000	2,00,000
					Sub-total	6,67,600
C.	Environmental Monitoring					
1	Air quality	Construction	Per sample	48	15,000	7,20,000
2	Water quality			24	9,200	2,20,800
3	Noise Levels			48	5,000	2,40,000
4	Soil			24	8,000	1,92,000
5	Ambient Air Quality	Operation/ Defect Liability Period	Per Sample	24	15,000	3,60,000
6	Water quality			24	9,200	2,20,800
7	Ambient Noise Quality			24	5,000	2,40,000
					Sub-total	21,93,600
D.	Capacity Building (Includes cost estimates for entire sub-project area not included in the package costs)					
1	Capacity Building expenses for 2 sessions	EMP Training at Site. Implementation of EMMP for PIU and Engineer	Lump sum In Rs.	2	2,00,000	4,00,000
					Sub-total	4,00,000
					TOTAL INR	32,51,400

E. Environmental Monitoring and Reporting Process

167. The PMU (UEAP: ADB) will monitor and measure the progress of EMMP implementation. PIU (UEAP: ADB) will undertake site inspections and document review to verify compliance with the EMMP and progress toward the final outcome. Environment and Safety Officer of the Contractor will submit the monitoring of EMMP to the DSC/Engineer on day to day basis. DSC/Engineer will submit monthly EMMP monitoring and implementation reports to PIU-CA, who will take follow-up actions, if necessary. PIU (UEAP: ADB)/IA will submit quarterly monitoring and implementation reports to PMU. The PMU will submit semi-annual monitoring reports to ADB based on reporting of PIU (UEAP: ADB)/IA and its own site inspections, assessment of the implementation performance. PMU (UEAP: ADB) will also take corrective actions as required.
168. Monitoring reports will be posted in a location accessible to the public.
169. ADB will review project performance against the EA's commitments as agreed in the legal documents. The extent of ADB's monitoring and supervision activities will be commensurate with the Project's risks and impacts. Implementation of social and environmental safeguards related requirements will be integrated into the project performance management system. ADB will monitor projects on an ongoing basis until a project completion report is issued. The Standardized EMMP to guide the contractor in mitigating Environmental Impacts is given in **Table VII -3**.

Table VII-3: Standardized EMMP to Guide the Contractor in Mitigating Environmental Impacts

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
1.	Site Establishment and Preliminary Activities Impacts				
1.1	Legislation, Permits and Agreements	In all instances, EA, IA contractors and consultants must remain in compliance with relevant environmental legislation of India at the national, state and local levels.	1. Permissions/NOCs/Consents requirement – IA 2. Permissions/NOCs/Consents requirement for equipment/machineries, Borrow area/ quaries etc. Contractor	PMU	IA, Contractor
		Proof of compliance to statutory requirements must be forwarded by the facility owner contractor to PMU/PIU in relation to hot mixing, stone crushers, diesel generators etc.	ESQ-Contractor, Engineer, & Environmental Expert or DSC (EE)	PMU	
		A copy of the EMP must be kept on site during the construction period.	ESQ-Contractor Engineer & EE	PIU, IA & PMU	
1.2	Education of site staff on general and Environmental Conduct ²	Ensure that all site personnel have a basic level of environmental awareness training	ESQ-Contractor and EE EE to deliver	IA & PMU	Contractor, IA
		Staff operating equipment (such as excavators, loaders, etc.) shall be adequately trained and sensitized to any potential hazards associated with their task	Environment and Safety Officer of Contractor, and EE	PIU, IA & PMU	Contractor
		No operator shall be permitted to operate critical items of mechanical equipment without having been trained by the Contractor	Contractor and EE	PIU, IA & PMU	
		All employees must undergo safety training and wear the necessary protective clothing/ equipment	Contractor and EE	IA & PMU	
		A general regard for the social and ecological well-being of the site and adjacent areas is expected of the site staff. Workers need to be made aware of the following general rules: • No alcohol / drugs to be present on site; • Measures for abatement of noise due to construction related activities and conduct of work force, • Construction staff are to make use of the	Contractor and EE	IA & PMU	

² These points need to be made clear to all staff on site before the work commences.

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		<p>facilities provided for them, as opposed to ad-hoc alternatives (e.g. use of firewood for cooking, the use of surroundings as a toilet facility are forbidden);</p> <ul style="list-style-type: none"> • Trespassing on private/commercial properties adjoining the site is forbidden; and • Other than pre-approved security staff, no workers shall be permitted to live on the construction site. No worker may be forced to do work that is potentially dangerous or for what he / she is not trained to do. 			
1.3	Social impacts ³	Open liaison channels shall be established between the Site owner, operator, the contractors and interested and affected parties such that any queries, complaints or suggestions pertaining to environmental management aspects can be dealt with quickly and by the appropriate person(s).	Environment and Safety Officer of Contractor with the Engineer, EE & PIU	IA & PMU	Contractor
		A communications strategy is of vital importance in terms of accommodating traffic during road closure. The road closure together with the proposed detour needs to be communicated via advertising, pamphlets, radio broadcasts, road signage, etc.	Contractor with the Engineer, EE & PIU	IA & PMU	Contractor
		Provide sign boards for pedestrians to inform nature and duration of construction works and contact numbers for concerns/complaints.	Contractor with the Engineer, EE & PIU	IA & PMU	Contractor
		Storage facilities, elevated tanks and other temporary structures on site shall be located such that they have as little visual impact on local residents as possible.	Engineer and EE	IA & PMU	
		In areas where the visual environment is particularly important (e.g. along commercial/ tourism routes) or privacy concerns for surrounding buildings exist, the site may require screening. This could be in the form of shade	Engineer and EE	IA & PMU	

³ It is important to take notice of the needs and wishes of those living or working adjacent to the site. Failure to do so can cause disruption to works.

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		cloth, temporary walls, or other suitable materials prior to the beginning of construction. Special attention shall be given to the screening of highly reflective materials on site.	EE	IA & PMU	
1.4	Lack of sufficient planning to assure long term sustainability of the improvements and ensure protection of the assets created and the architectural/archaeological character of the surroundings	Design will include provisions for ensuring effective maintenance and protection of the assets created so as to ensure the long term sustainability	Contractor, Engineer, EE, and PIU	IA & PMU	
2.	Design Impacts and Pre-construction Impacts				
2.1	Layout of components to avoid impacts on the aesthetics of the site	The project components siting will avoid impacts on the aesthetics of the site, ensure minimal impacts and in compliance with statutory and regulatory requirements.	Engineer, EE, and PIU	IA & PMU	
2.2	Increased storm water runoff from alterations of the site's natural drainage patterns due to landscaping, excavation works, and addition of paved surfaces	Design of proposed components will enable efficient drainage of the sites and maintain natural drainage patterns.	Engineer, SE, and PIU	IA & PMU	
2.3	Selection of materials and construction technologies, if not carefully chosen, will adversely impact the aesthetic appeal of the destinations	Selection of materials will be from approved sources and construction technologies proposed will strictly conform to the Uttarakhand architecture. Any new landscaping elements will only utilize native species. Material selection would be done keeping in view that no asbestos (except as allowed), and CFC is used.	Engineer, EE, and PIU	IA & PMU	
2.4	Socio cultural resources- Ground disturbance can uncover and damage archaeological and historical remains	Consult Archaeological Survey of India (ASI) and/or concerned Dept. of Uttarakhand Govt. as applicable to obtain an expert assessment of the archaeological potential of the site; Consider alternatives if the site is found to be of	Engineer, EE, and PIU	Contractor, A & PMU	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		medium or high risk; and Develop a protocol for use by the construction contractors in conducting any excavation work, to ensure that any chance finds are recognized and measures are taken to ensure they are protected and conserved.			
2.5	Integration of energy efficiency and energy conservation programs in design of sub-project components	The detailed designs for the sub-project components shall ensure that environmental sustainability principles, including energy efficiency, resource recycling, waste minimization, rainwater harvesting etc.	Engineer, EE, and PIU	IA & PMU	
2.6	Site clearance activities, including delineation of construction areas	Any removal of vegetation or tree felling shall be done after taking statutory permissions if required. All works shall be carried out such that the damage or disruption of flora other than those identified for cutting is minimum. Only ground cover/shrubs that impinge directly on the permanent works or necessary temporary works shall be removed with prior approval from the Environmental Expert of DSC. All areas used for temporary construction operations will be subject to complete restoration to their former condition with appropriate rehabilitation procedures as per the rehabilitation plan prepared by the contractor and approved by the EE of DSC.	Contractor	Engineer, EE and PIU	Contractor
3	Construction Impacts				
3.1	Constructor Camps - Location, Selection, Design and Layout	Siting of the construction camps shall be as per the guidelines below and details of layout to be approved by DSC. Construction camps shall not be proposed within 500 m from the sensitive receptors, nearest settlements to avoid conflicts and stress over the infrastructure facilities with the local community. Location for stockyards for construction materials shall be identified at least 300 m away from watercourses. Construction camps will be located away from	Contractor with the Engineer and EE	PIU, IA & PMU	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		settlements and drainage from and through the camps will not endanger any domestic or public water supply. Construction camps including sanitation facilities must be adequately drained. Sewage management through septic tanks and solid waste management through local ULB system or other alternate measures.			
3.2	Drinking water availability	Sufficient supply of potable water to be provided and maintained. The water quality shall be as per standard norms for drinking water. If the drinking water is obtained from an intermittent public water supply then storage tanks will be provided. The cleanliness of the storage tanks will be ensured and all measures to be taken to avoid any water contamination.	Contractor	Engineer and EE	
3.3	Waste disposal	Pre-identified disposal location (identified by Contractor and approved by EE-DSC) shall be part of Comprehensive Waste Disposal Plan. Solid Waste Management Plan to be prepared by the Contractor in consultation and with approval of Environmental Specialist of DSC. The Environmental Specialist of DSC shall approve these disposal sites after conducting a joint inspection on the site with the Contractor. Wherever, possible Solid waste management shall be through local ULB system or other alternate measures. Contractor shall ensure that waste shall not be disposed off near the water courses or agricultural land, Orchards and Natural Habitats like Grasslands.	Contractor with the Engineer	PIU, IA & PMU	
3.4	Stockpiling of construction materials	Stockpiling of construction materials does not impact obstruct the drainage and Stockpiles will be covered to protect from dust and erosion.	Contractor with the Engineer	PIU, IA & PMU	
3.5	Quarry operations	Contractor shall finalize the quarry for procurement of construction materials after assessment of the availability of sufficient quantity of materials, quality and other logistic	Contractor with the Engineer	PIU, IA & PMU	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		arrangements. The Contractor shall obtain materials from approved quarries only after consent of the Department of Mines and Geology and District Administration. Adequate safety precautions will be ensured during transportation of quarry material from quarries to the construction site. Vehicles transporting the material will be covered to prevent spillage.			
3.6	Arrangement construction water for	The Contractor shall use ground/surface water as a source of water for the construction with the written consent from the concerned Department. To avoid disruption/ disturbance to other water users, the Contractor shall extract water from fixed locations and consult DSC & IIR agencies before finalizing the locations. The Contractor shall provide a list of locations and type of sources from where water for construction shall be extracted. The Contractor shall need to comply with the requirements of the State Ground Water Department for the extraction and seek their approval for doing so and submit copies of the permission to DSC.	Contractor with the Engineer	PIU, IA & PMU	
3.7	Soil/Land Erosion	Slope protection measures will be undertaken as per design to control soil erosion.	Contractor with the Engineer	FPIU, IA & PMU	
3.8	Water Pollution from Construction Wastes	The Contractor shall take all precautionary measures to prevent entering of wastewater into streams, water bodies or the irrigation system. during construction Contractor shall not wash his vehicles in river/stream water and shall not enter diverted nearby the water resource area for that purpose.	Contractor with the Engineer	Engineer, PIU & PMU	
3.9	Water Pollution from Fuel and Lubricants	The Contractor shall ensure that all construction vehicle parking locations, fuel lubricants storage sites, vehicle, machinery and equipment maintenance and refueling sites shall be located	Contractor	EE of DSC, Engineer, PIU & PMU	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		at least 300 m away from rivers/streams and irrigation canal/ponds if any Contractor shall ensure that all vehicle/machinery and equipment operation, maintenance and refueling shall be carried out in such a manner that spillage of fuels and lubricants does not contaminate the ground. Wastewater from vehicle parking, fuel storage areas, workshops, wash down and refueling areas shall be collected and separated through an oil interceptor before discharging it on land or into other treatment system as per specific standards and UEPPCB and ULB norms, if any.			
3.10	Soil Pollution due to fuel and lubricants, construction waste	The fuel storage and vehicle cleaning area will be stationed such that spillage of fuels and lubricants does not contaminate the ground. All pollution parameters will be monitored as per monitoring plan. Wastewater from vehicle parking, fuel storage areas, workshops, wash down and refueling areas shall be collected and separated through an oil interceptor before discharging it on land or into other treatment system.	Contractor	Engineer, PIU & PMU	
3.11	Generation of dust	The Contractor will take every precaution to reduce the levels of dust at construction site. Regular sprinkling of water and Stockpiles of soil will be kept covered in such a manner to minimize dust generation.	Contractor	Engineer, PIU & PMU	Contractor
3.12	Emission from Constructor. Vehicles, Equipment and Machinery	All vehicles, equipment and machinery used for construction shall conform to the relevant Bureau of India Standard (BIS) norms. The discharge standards promulgated under the Environment Protection Act, 1986 shall be strictly adhered to. The use of silent/quiet equipment compliant with India ambient noise standards and standards specified for manufacturers shall be encouraged in the sub Project. The Contractor shall maintain a record of PUC	Contractor	Engineer, PIU & PMU	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		for all vehicles and machinery used during the contract period which shall be produced for verification whenever required.			
3.13	Noise Pollution	<p>The Contractor shall confirm that all Construction equipment used in construction shall strictly conform to the MoEF/CPCB noise standards and all Vehicles and equipment used in construction shall be fitted with exhaust silencers.</p> <p>A: the construction sites noise construction work such as crushing, operation of DG sets, use of high noise generator equipment shall be stopped during the night time between 10.00 pm to 6.00 am.</p> <p>Noise limits for construction equipment used in this project will be in conformity to the BIS/SPCB/CPCB standards.</p> <p>Regular monitoring of ambient noise levels to ensure compliance to Uttarakhand Environment Protection & Pollution Control Board standards.</p>	Contractor with the Engineer	EE, PIU & PMU	
3.14	Material Handling at Site	<p>Workers Employed on mixing cement, lime mortars, concrete etc., will be provided with protective footwear and protective masks and goggles.</p> <p>Workers, who are engaged in welding works, will be provided with welder's protective eye-shields.</p> <p>Workers engaged in stone breaking activities will be provided with protective goggles, masks, and clothing.</p> <p>The use of any toxic chemical will be strictly in accordance with the manufacturer's instructions and applicable regulations. The Engineer will be given at least 6 working days' notice of the proposed use of any chemical. A register of all toxic chemicals delivered to the site will be kept and maintained up to date by the Contractor.</p>	Contractor	Engineer, PIU & PMU	
3.15	Disposal of Construction Waste/Debris/Cut Material	The Contractor shall confirm that safe disposal of the construction waste will be ensured in the pre-identified disposal locations. In no case, any	Contractor	Engineer, PIU & PML	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		construction waste will be disposed around the project site indiscriminately.			
3.18	Safety Measures During Construction	<p>Personal Protective Equipment for workers on the project and adequate safety measures for workers during handling of materials at site will be taken up. The Contractor has to comply with all regulations regarding safe scaffolding, ladders, working platforms, gangway, stairwells, excavations, trenches and safe means of entry and egress.</p> <p>The Contractor has to comply with all regulations for the safety of workers. Precaution will be taken to prevent danger of the workers from fire, etc. First aid treatment will be made available for all injuries likely to be sustained during the course of work. Contractor shall also organize periodic visits by a qualified registered medical practitioner to the site and workers camp. Contact information of Doctor, availability & location of first aid box shall be displayed in appropriate language both at work site and workers camp.</p> <p>The Contractor will conform to all anti-malaria instructions given to him by the Engineer.</p> <p>The Contractor will also ensure that the interests of the community are preferably not disturbed, and if unavoidable then disturbed to the minimum. Provide traffic management personnel, barricade, appropriate signage and safety information in and around the construction site and prevent local people entering into the construction site.</p>	Contractor	Engineer, PIU & PMU	Contractor
3.17	Clearing of Construction of Camps and Restoration	<p>Contractor to prepare site restoration plans for approval by the Engineer. The plan is to be implemented by the contractor prior to demobilization.</p> <p>On completion of the works, all temporary structures will be cleared away, all rubbish burnt.</p>	Contractor	Engineer, PIU & PMU	Contractor

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		excavate or other disposal pits or trenches filled in and effectively sealed off and the site left clean and tidy, at the Contractor's expense, to the entire satisfaction of the Engineer and facility owner.			
3.18	Risk of archaeological chance finds	Strictly follow the protocol for chance finds in any excavation work; Request FPIU/DSC or any authorized person with archaeological field training to observe excavation; Stop work immediately to allow further investigation if any finds are suspected; and Inform FPIU/DSC, and take any action they require ensuring its removal or protection in-situ.	Contractor	Engineer, PIU & PMU	
3.19	Conflict with locals	Contractor shall ensure that mostly the local labourers are employed and migratory laborer shall be employed only in case of unavoidable circumstances.	Contractor	Engineer, PIU & PMU	
3.20	Environment Safeguard Officer	Contractor shall appoint one full-time suitably qualified and experienced Environment and Safety Officer who shall be responsible for assisting contractor in implementation of EMMP, community liaison, consultations with interested/affected parties, reporting and grievance redressal on day-to-day basis. This environment and safety officer will be at site till all works related to the project including demobilization are completed.	Contractor	Engineer, PIU & PMU	Contractor
4	Operation and Maintenance impacts				
4.1	Environmental Conditions	The periodic monitoring of the ambient air quality, noise level, water (both ground, surface water) quality and soil, in the subproject area as suggested in polluter monitoring plan through an approved monitoring agency.	Pollution Monitoring Agency appointed by: A	SDMA, PMU	
4.2	Increased Pollution load on the Ecosystem in peak tourist season	Increased Pollution load will be addressed through better facilities. Wherever, possible Solid waste management shall be through local ULB system or other	IA and EA	SDMA, PMU & GoJ	

S. No.	Activity	Management/ Mitigation	Implementation Responsibility	Supervision Responsibility	Source of Fund
		<p>alternate measures.</p> <p>Trampling impacts on vegetation and soil will be minimized by designating proper walkways in and around proposed facilities. Proper parking facilities and traffic management for catering to increased vehicle movement shall be provided.</p> <p>The project (UEAP) will have positive impacts on the socio-economic conditions of people of project area by way of providing better road connectivity, water supply & allied facilities. Tourism infrastructure and emergency rescue, evacuation facilities.</p> <p>As per Loan covenants of UEAP:</p> <p>a) EA shall prepare guidelines for new infrastructure to be developed under the sector;</p> <p>(b) prepare master plan for redevelopment of Kedarnath Dam; and</p> <p>(c) Undertake the carrying capacity and tourist regulation studies and measures thereof.</p>			
4.3	Unhygienic condition due to poor maintenance of sanitation facilities and irregular solid waste collection	IA will carry out maintenance of the existing toilets, and carry out the regular collection and disposal of wastes as per norms. New facilities proposed to be created under UEAP will cater to additional load.	IA	IA	

EE= Environmental Expert of Engineer (DSC), DSC= Design & Supervision Consultants, IA= Implementing Agency, EA= Executing Agency, PIU= Project Implementation Unit

F. Performance Indicators

170. The performance indicators of implementation of environmental management and monitoring programme has been given in *Table VII-4*.

Table VII-4: Performance Indicators of EMMP

Sl. No	Performance Indicators	Target	Achievement in Semi-annually and Annually
1.	Budget	Environmental Budget (EMMP Budget)	Expenditure till date
A. Performance Indicators of Monitoring Plan			
2.	Ambient Air Quality (AAQ)	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
3.	Noise Level	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
4.	Water Quality	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
5.	Soil	Total Number of samples as per Environmental Monitoring Plan	Total Number of samples collected
6.	Safety of Workers	List of PPE as per the number labours	List of PPEs actually provided in the project
B. Performance Indicators of Environmental Management Plan			
7.	Permissions,/ NoCs/Consents requirement	Target timeline to obtain the permit/NoC/ consents and its validity	List of Permission and NoCs / consents obtained till date and status of its validity.
8.	Public Consultation	Total Number of planned Public Consultation with timeline and coverage of people.	Number of public consultation conducted till date and actual coverage of the people.
9.	Grievance Redressal	Total number of complaints received, its timeline to response and resolution	Actual number of complaints resolved in percentage, response time.
10.	Issues raised in Public Consultation	Target to attend the issues raised in the Public Consultation	Status of compliance to the issues of Public consultation
11.	Information Disclosure	List of information and locations where information to be disclosed	Actual locations where information has been disclosed.
12.	Education of site staff or Environmental training	Total Number of staffs to be trained	No of staff actually
13.	Capacity Building	Total number of sessions to be covered Total Number of contractors, PIUs and DSCs to be covered	Number of Sessions completed and Number of contractors, PIUs and DSCs.
14.	Implementation of EMP mitigation Measures	All items of Environmental Management Plan with timeline and its respective regulatory standards like for Ambient air Quality – NAAQS, 2009	Implementation status of EMP items till date

Sl. No	Performance Indicators	Target	Achievement in Semi-annually and Annually
		standards, Drinking water – IS:10500 etc, Residual Chlorine – UEPPCB standards and CPHEEO manual for handling.	
15.	Reporting	List and number of Report to be submitted	List and number of reports submitted

G. Grievance Redress Mechanism

171. The EA has established a mechanism to receive and facilitate resolution of affected peoples concerns, complaints, and grievances about the Project's environmental performance (Appendix C). The project-specific grievance redress mechanism (GRM) is not intended to bypass the government's own redress process; rather it is intended to address affected people's concerns and complaints promptly, making it readily accessible to all segments of the affected people and is scaled to the risks and impacts of the Project.
172. The PMU and PIU (UEAP: ADB) will make the public aware of the GRM through public awareness campaigns. Grievances will be filed in writing using the Complaint Register and Complaint Forms or by phone with any member of the PMU and PIU (UEAP: ADB). The contact phone number of the PIU and the PMU have been publicized through the media and placed on notice boards outside their offices and at construction sites and will serve as a hotline for complaints. The safeguard documents will be made available to the public in an accessible version including information on the GRM and will be widely disseminated throughout the corridor by the safeguards officers in the PMU and PIUs with support from the NGO engaged to implement the Community Awareness Program.
173. The PIU has already convened Grievance Redressal Committees (GRC) of the voiced grievance at the project level consisting of members of local government, NGOs, project staff, and representatives of the affected people. Decisions on the grievance are to be made within 15 days of receipt by the committee formed for the purpose. If the grievance cannot be solved, the PMU is notified to further advice on the situation with higher government and legal bodies.
174. The GRC will ensure rights of vulnerable and poor are included. The grievance mechanism will be scaled to the risks and adverse impacts of the Project. It will address affected people's concerns and complaints promptly, using an understandable and transparent process that is gender responsive, culturally appropriate, and readily accessible to all segments of the affected people at no costs and without retribution. The mechanism developed will be in a manner that it shall not impede access to the existing judicial or administrative remedies. The affected people will be appropriately informed about the mechanism.
175. The PIU officers will be responsible for processing and placing all papers before the GRC, maintaining database of complaints, recording decisions, issuing minutes of the meetings and monitoring to see that formal orders are issued and the decisions carried out. All costs involved in resolving the complaints (meetings, consultations, communication and reporting/information dissemination) will be borne by the PMU (UEAP: ADB).
176. The safeguard monitoring reports will include the following aspects pertaining to progress on grievances: (i) number of cases registered with the GRC, level of jurisdiction (first, second and third tiers), number of hearings held, decisions made, and the status of pending cases; and (ii) lists of cases in process and already decided upon may be

prepared with details such as Name, ID with unique serial number, date of notice, date of application, date of hearing, decisions, remarks, actions taken to resolve issues, and status of grievance (i.e., open, closed, pending).

VIII. CONCLUSION AND RECOMMENDATION

177. The proposed sub-projects components do not involve any interventions in surrounding environment, natural as well and cultural heritage destinations and have less significant (direct/indirect) environmental impacts. It is expected that the proposed sub-project will enhanced economic growth and provision of livelihood opportunities for local communities through tourism infrastructure development with a focus on preservation and development of natural and cultural heritage and incidental services. The proposed project under the infrastructure development will provide support facility to the State of Uttarakhand, to enhance and develop the tourism sector as a key driver for economic growth on one hand and useful during emergency period on other.
178. This IEE has identified minor likely impacts on water, air and noise during construction and operation period and has defined mitigation measures. Those mitigation measures will be implemented and monitored during the sub-project execution. Further, the provision of environmental Infrastructure, including access to sanitation and waste management facilities within the project sites, will better the environmental conditions and minimize the pollution related and aesthetic quality etc.
179. The specific management measures laid down in the IEE will effectively address any adverse environmental impacts due to the sub-project. The effective implementation of the measures proposed will be ensured through the building up of capacity towards environmental management within the PMU/PIU (JEAP: ADB) supplemented with the technical expertise of a Safeguards Specialist as part of the DSC Consultants. Further, the environmental monitoring plans provide adequate opportunities towards course correction to address any residual impacts during construction or operation stages.
180. On the basis of the IEE report, It is expected that the proposed project components have only minor temporary and reversible impacts or simply say very less significant environmental impacts on environment. These impacts can be easily mitigated through adequate mitigation measures and regular monitoring during the Design, Construction and Post-construction Phases of the project. It is recommended that PMU/PIU (JEAP: ADB) should have monitoring responsibility in environmental issues of all program components and to ensure the environmental sustenance.
181. The IEE carried out for the sub-project show that the proposed sub-components will result in net environmental benefits, and that any adverse environmental impact can be addressed through proper location, planning, and design of the proposed sub-project; control of construction activity and mitigation measures. The EMP provides for mitigation of all identified impacts and the contract clauses for the environmental provisions will be part of the civil works contracts. Further, the proposed sub-project elements have been consulted with the stakeholders and no significant issues requiring redressal in terms of environmental safeguards exist.
182. Based on the findings of the IEE, the classification of the sub-projects as Category - B is confirmed, and no further special study or detailed EIA needs to be undertaken to comply the rules and regulations under Government of Uttarakhand, Government of India and ADB's (Safeguard Policy Statement, 2009).
183. The "No-objection Certificates" (NOCs) from the concerned Revenue Department (District Magistrates) and user agencies have been obtained for the commencement of civil work. There is no environmental and social issue at this stage. Thus, the commencement of civil work for 8 locations can be started as per target of the Uttarakhand Emergency Assistance Project on priority basis.



Dipankar Majumdar
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Dr. Surjit Singh Deepak
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DSC-CA

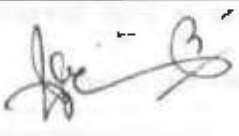

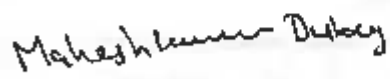



Environmental Specialist, PIU (CA)

APPENDICES

Environmental Categorization

A. Instructions			
(i) The Project team completes and submits the form to the Environment and Safeguard Division (RSES) for endorsement by RSFS Director and for approval by the Chief Compliance Officer (CCO).			
(ii) The classification of a project is a continuing process. If there is a change in the project components or/and site that may result in category change, the Sector Division submits a new form and requests for re-categorization and endorsement by RSES Director and by the CCO. The old form is attached for reference.			
(iii) In addition, the project team may propose in the comments section that the project is highly complex and sensitive (HCS), for approval by CCO. HCS projects are a subset category A project that ADB deems to be highly risky or contentious or involve serious and multidimensional and generally interrelated potential social and/or environmental impacts.			
B. Project Data			
Country/Project No./Project Title		: Loan 3055-IND, Uttarakhand Emergency Assistance Project (UEAP)	
Department/Division		: Sub-Project: Construction of 8 Multipurpose Hall cum Rescue Centre in 4 districts of Uttarakhand i.e. Dehradun, Pauri Garhwal, Uttarkashi and Rudraprayag	
Processing State:		: Sub Project Appraisal Report (SAR) Preparation	
Modality			
<input type="checkbox"/> Project loan <input type="checkbox"/> Program Loan <input type="checkbox"/> Financial Intermediary <input type="checkbox"/> General Corporate Finance <input type="checkbox"/> Sector Loan <input checked="" type="checkbox"/> MFF <input checked="" type="checkbox"/> Emergency Assistance <input type="checkbox"/> Grant <input type="checkbox"/> Other Financing modalities			
C. Environment Category			
<input checked="" type="checkbox"/> New <input type="checkbox"/> Re-categorization – Previous Category []			
Category A	<input checked="" type="checkbox"/> Category B	Category C	Category FI
D. Basis for categorization/ Re-categorization (Pl. attach documents)			
<input checked="" type="checkbox"/> REA Checklist as Appendix -B			
<input type="checkbox"/> Project and/or Site Description			
<input type="checkbox"/> Other			
E. Comments			
Project Team Comments		ESMC Comments	
In Civil Aviation Program under ADB Emergency assisted UEAP, the Construction of 8 nos. Multipurpose hall cum Rescue Centre are proposed in the Hellpads to strengthen the disaster preparedness capability of the state and to restore visitor's faith/confidence in the tourism safety through provision of better connectivity and presence of rescue, relief and evacuation mechanisms.		The Project Category as per ADB Safeguard Policy (SPS) 2009 is "B" and IEE is required.	

<p>Through strengthening of disaster risk management system, Institutions & infrastructure in a phased manner with Construction of Multipurpose hall cum Rescue as envisaged presently, the project has the potential to benefit the entire State of Uttarakhand by creating image of a safer tourist friendly destination with a strong capability in disaster preparedness.</p> <p>The proposed sub-project of "Construction of 8 nos. Multipurpose Hall cum Rescue Centre in 4 districts of Uttarakhand falls under the Environmental Category "B" as its potential environmental Impacts are less adverse than those of category A projects. The Impacts are site specific and can be mitigated through EMMP.</p>	
F. Recommended for Approval	
Proposed by : (Environment Safeguard Specialist, DSC – CA)	Reviewed by: (Environment Safeguard Specialist, PIU – CA)
 Dr. Surjit Singh Deepak	 Mahesh Kumar Dubey
(Sign of Environment Safeguard Specialist, DSC – CA)	(Sign of Environment Safeguard Specialist, PIU-CA)
Date:	Date: 29/05/16
	 Mahesh Kumar Dubey
(Sign. Of Deputy Program Manager, PIU-CA, UEAP)	Verified by : Environment Officer, PMU, UEAP
Date:	Date: 29/05/16
 Endorsed by : Program Manager, PIU-CA, UEAP	
Chief Compliance officer: The project is not coming under HCS	

RAPID ENVIRONMENTAL ASSESSMENT (REA) CHECKLIST**Instructions:**

- This checklist is to be prepared to support the environmental classification of a project.
- This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at Tiuni, Dehradun
District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall cum Rescue Centre

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural area, disfiguration of landscape or		✓	No such area is within the proposed project

SCREENING QUESTIONS	Yes	No	REMARKS
potential loss/damage to physical cultural resources?			site.
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		√	Not involved
Dislocation and compulsory resettlement of people?		√	Not involved
Disproportionate impacts on the poor, women and children, indigenous		√	No such impact will be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
people or other valuable groups			
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		✓	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		✓	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		✓	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		✓	No such impact shall be anticipated
Risk to community health and safety due to the transport, storage and use		✓	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?			
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum recue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidellnes for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	√		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		√	
Generation of wastewater during construction or operation?	√		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm urges, tsunami or	√		The project site is in the hilly terrain and is in the bank of River Ton, so there are the chances of land slides and flooding. The area lies at hazard prone zone. So the

Climate change and disaster risk questions	Yes	No	Remarks
volcanic eruptions and climate changes?			helipad is been proposed for quick evacuation of the community during the time natural calamity. The project site is in the Seismic Zone V as per the Seismic zone map of India.
<ul style="list-style-type: none"> ▪ Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability 		√	
<ul style="list-style-type: none"> ▪ Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)? 		√	
<ul style="list-style-type: none"> • Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)? 		√	
<ul style="list-style-type: none"> • Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? 		√	The project site is in the hilly terrain and is in the bank of River Ton, so there are the chances of land slides and flooding.
<ul style="list-style-type: none"> • Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, 		√	

Climate change and disaster risk questions	Yes	No	Remarks
exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		√	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		√	



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DSC-CA



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Environmental Safeguard Specialist
DSC-CA



Environmental Specialist, PIU (CA)

Rapid Environmental Assessment (REA) Checklist

Instructions:

- This checklist is to be prepared to support the environmental classification of a project.
- This checklist is to be completed with the assistance of an Environment Specialist In a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:

India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
 Construction of Helipad with associated facilities at Srinagar, Pauri
 Garhwal District In the state of Uttarakhand
 Sub Project: Construction of Multipurpose Hall cue Rescue Centre.

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		√	
Protected Area		√	
Wetland		√	
Mangrove		√	
Estuarine		√	
Buffer zone of protected area		√	
Special area for protecting biodiversity		√	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural area, disfiguration of landscape or		√	No such area is within the proposed project site.

SCREENING QUESTIONS	Yes	No	REMARKS
potential loss/damage to physical cultural resources?			
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such Impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or Involuntary resettlement of people?		√	Not involved
Dislocation and compulsory resettlement of people?		√	Not involved
Disproportionate impacts on the poor, women and children, indigenous		√	

SCREENING QUESTIONS	Yes	No	REMARKS
people or other valuable groups			
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		√	No such impact shall be anticipated
Risk to community health and safety due to the transport, storage and use		√	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?			
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		✓	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	✓		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		✓	
Generation of wastewater during construction or operation?	✓		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone	✓		The project site is in the hilly terrain, so there is the chance of landslides. The area lies at hazard prone zone. So the

Climate change and disaster risk questions	Yes	No	Remarks
winds, storm surges, tsunami or volcanic eruptions and climate changes?			helipad is been proposed for quick evacuation of the community during the time natural calamity. The project site is in the Seismic Zone V as per the Seismic zone map of India.
• Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability		✓	
• Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)?		✓	
• Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)?		✓	
• Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		✓	The project site is in the hilly terrain, so there is the chance of landslides.
• Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days,		✓	

Climate change and disaster risk questions	Yes	No	Remarks
exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



Dipankar Majumdar
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Environmental Specialist, PIU (CA)

Rapid Environmental Assessment (REA) Checklist

Instructions:

- This checklist is to be prepared to support the environmental classification of a project.
- This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

**India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Hellpad with associated facilities at Grastan Gang
Kotdwar, Pauri Garhwal District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall and Rescue Centre.**

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural area, disfiguration of landscape or		✓	No such area is within the proposed project site.

SCREENING QUESTIONS	Yes	No	REMARKS
potential loss/damage to physical cultural resources?			
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		√	Not involved
Dislocation and compulsory resettlement of people?		√	Not involved
Disproportionate impacts on the poor, women and children, indigenous		√	

SCREENING QUESTIONS	Yes	No	REMARKS
people or other valuable groups			
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		√	No such impact shall be anticipated
Risk to community health and safety due to the transport, storage and use		√	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?			
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		✓	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	✓		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		✓	
Generation of wastewater during construction or operation?	✓		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
<ul style="list-style-type: none"> Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone 	✓		<p>The project site is in the hilly terrain, so there is the chance of landslides.</p> <p>The area lies at hazard prone zone. So the</p>

Climate change and disaster risk questions	Yes	No	Remarks
winds, storm urges, tsunami or volcanic eruptions and climate changes?			helipad is been proposed for quick evacuation of the community during the time natural calamity. The project site is in the Seismic Zone V as per the Seismic zone map of India.
<ul style="list-style-type: none"> • Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability 		v	
<ul style="list-style-type: none"> • Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)? 		v	
<ul style="list-style-type: none"> • Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)? 		v	
<ul style="list-style-type: none"> • Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? 		v	The project site is in the hilly terrain, so there is the chance of landslides.
<ul style="list-style-type: none"> • Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, 		v	

Climate change and disaster risk questions	Yes	No	Remarks
exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



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Rapid Environmental Assessment (REA) Checklist

Instructions:

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- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

**India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at Lansdowne, Pauri
Garhwal District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall cue Rescue Centre.**

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural area, disfiguration of landscape or		✓	No such area is within the proposed project site.

SCREENING QUESTIONS	Yes	No	REMARKS
potential loss/damage to physical cultural resources?			
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	No such impact is anticipated.
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		√	Not involved
Dislocation and compulsory resettlement of people?		√	Not involved
Disproportionate impacts on the poor, women and children, indigenous		√	

SCREENING QUESTIONS	Yes	No	REMARKS
people or other valuable groups			
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		√	No such impact shall be anticipated
Risk to community health and safety due to the transport, storage and use		√	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?			
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	√		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		√	
Generation of wastewater during construction or operation?	√		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone	√		The project site is in the hilly terrain, so there is the chance of landslides. The area lies at hazard prone zone. So the

Climate change and disaster risk questions	Yes	No	Remarks
winds, storm urges, tsunami or volcanic eruptions and climate changes?			helipad is been proposed for quick evacuation of the community during the time natural calamity. The project site is in the Seismic Zone V as per the Seismic zone map of India.
• Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability		√	
• Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)?		√	
• Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)?		√	
• Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		√	The project site is in the hilly terrain, so there is the chance of landslides.
• Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days,		√	

Climate change and disaster risk questions	Yes	No	Remarks
exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



Dipankar Majumdar
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- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at Augustyumuni,
Rudraprayag District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall cum Rescue Centre.

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts			
Will the Project cause...			
Encroachment on historical/cultural		✓	No such area is within the proposed project

SCREENING QUESTIONS	Yes	No	REMARKS
area, disfiguration of landscape or potential loss/damage to physical cultural resources?			site.
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		√	Not involved
Dislocation and compulsory resettlement of people?		√	Not involved
Disproportionate impacts on the poor,		√	

SCREENING QUESTIONS	Yes	No	REMARKS
women and children, indigenous people or other valuable groups			
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		✓	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		✓	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		✓	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		✓	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
Risk to community health and safety due to the transport, storage and use and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?		✓	No such impact shall be anticipated
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		✓	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	✓		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		✓	
Generation of wastewater during construction or operation?	✓		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
• Is the project area subjected to	✓		The project site is in the hilly terrain, so there

Climate change and disaster risk questions	Yes	No	Remarks
<p>hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes?</p>			<p>Is the chance of landslides.</p> <p>The area lies at hazard prone zone. So the helipad is been proposed for quick evacuation of the community during the time natural calamity.</p> <p>The project site is in the Seismic Zone V as per the Seismic zone map of India.</p>
<ul style="list-style-type: none"> • Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability 		<p>✓</p>	
<ul style="list-style-type: none"> • Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)? 		<p>✓</p>	
<ul style="list-style-type: none"> • Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)? 		<p>✓</p>	
<ul style="list-style-type: none"> • Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? 		<p>✓</p>	<p>The project site is in the hilly terrain, so there is the chance of landslides.</p>
<ul style="list-style-type: none"> • Would weather, current and likely future climate conditions (e.g. prevailing humidity level, 		<p>✓</p>	

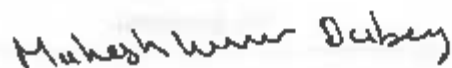
Climate change and disaster risk questions	Yes	No	Remarks
temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



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- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

**India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at GIC, Ukhmath,
Rudraprayag district in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall cum Rescue Centre**

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

Screening questions	Yes	No	Remarks
A. Project Siting			
Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	Not Applicable
Protected Area		✓	Not Applicable
Wetland		✓	Not Applicable
Mangrove		✓	Not Applicable
Estuarine		✓	Not Applicable
Buffer zone of protected area		✓	Not Applicable
Special area for protecting biodiversity		✓	Not Applicable
B. Potential Environmental Impacts			
Will the Project cause...			
Impairment of historical/cultural area,		✓	

Screening questions	Yes	No	Remarks
disfiguration of landscape or potential loss/damage to physical cultural resources?			
Disturbance to precious ecology (e.g. sensitive or protected areas)?		√	
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	
Increased air pollution due to project construction and operation?	√		A slight increase in local air pollution due to cutting and filling works and other associated construction activities is anticipated. However, the impact will be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Noise and vibration due to project construction or operation?	√		Noise level is expected to increase during construction activities, but it will be temporary, localized and reversible. This shall be mitigated by taking necessary precautionary measures. No blasting activity is required in the proposed subproject.
Disproportionate impacts on the poor, women and children, indigenous people or other valuable groups		√	
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances

Screening questions	Yes	No	Remarks
			only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		✓	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		✓	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population Influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		✓	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		✓	
Risk to community health and safety due to the transport, storage and use and/or		✓	

Screening questions	Yes	No	Remarks
disposal of materials such as explosives fuel and other chemicals during construction and operation?			
Community safety risks due to both accidental structure elements or members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	No such impact shall be anticipated
Generation of solid waste and/or hazardous waste?	√		No such impact shall be anticipated
Use of chemicals?		√	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of wastewater during construction or operation?	√		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify			

Climate change and disaster risk questions	Yes	No	Remarks
potential climate and disaster risks.			
<ul style="list-style-type: none"> Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm surges, tsunami or volcanic eruptions and climate changes? 	√		The area falls under Seismic Zone V as per seismic zonation map of India and thus prone to earthquakes.
<ul style="list-style-type: none"> Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability 		√	
<ul style="list-style-type: none"> Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)? 		√	
<ul style="list-style-type: none"> Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)? 		√	
<ul style="list-style-type: none"> Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? 		√	
<ul style="list-style-type: none"> Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of 		√	

Climate change and disaster risk questions	Yes	No	Remarks
project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



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Environmental Safeguards Officer
DSC-CA



Dr. Surjit Singh Deepak
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DSC-CA



Environmental Specialist, PIU (CA)

Rapid Environmental Assessment (REA) Checklist

Instructions:

- This checklist is to be prepared to support the environmental classification of a project.
- This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) involuntary resettlement, (ii) indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the "without mitigation" case. The purpose is to identify potential impacts. Use the "remarks" section to discuss any anticipated mitigation measures.

Country/Project Title:

**India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at Manera, Uttarkashi
District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall and Rescue Centre.**

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural		✓	No such area is within the proposed project

SCREENING QUESTIONS	Yes	No	REMARKS
area, disfiguration of landscape or potential loss/damage to physical cultural resources?			site.
Encroachment on precious ecology (e.g. sensitive or protected areas)?		√	The project is proposed in the Sports Stadium. No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		√	No such impact may be anticipated
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		√	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	√		There will be slightly increased in Air Pollution due to various project construction activities. This impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		√	No such impact will be anticipated
Noise and vibration due to project construction or operation?	√		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		√	Not involved
Dislocation and compulsory		√	Not involved

SCREENING QUESTIONS	Yes	No	REMARKS
resettlement of people?			
Disproportionate Impacts on the poor, women and children, indigenous people or other valuable groups	√		The project is proposed in the Sports Stadium. Issue of safety and protective measures.
Poor sanitation and solid waste disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	No such Impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds.
Social conflicts if workers from other regions or countries are hired?		√	No such Impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and		√	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
radiological hazards during project construction and operation?			
Risk to community health and safety due to the transport, storage and use and/or disposal of materials such as explosives fuel and other chemicals during construction and operation?		√	No such impact shall be anticipated
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	√		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		√	
Generation of wastewater during construction or operation?	√		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster			

Climate change and disaster risk questions	Yes	No	Remarks
risks.			
<ul style="list-style-type: none"> Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm urges, tsunami or volcanic eruptions and climate changes? 	√		<p>The project site is in the hilly terrain, so there is the chance of landslides.</p> <p>The area lies at hazard prone zone. So the helipad is been proposed for quick evacuation of the community during the time natural calamity.</p> <p>The project site is in the Seismic Zone V as per the Seismic zone map of India.</p>
<ul style="list-style-type: none"> Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability 		√	
<ul style="list-style-type: none"> Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)? 		√	
<ul style="list-style-type: none"> Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)? 		√	
<ul style="list-style-type: none"> Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides? 		√	<p>The project site is in the hilly terrain, so there is the chance of landslides.</p>

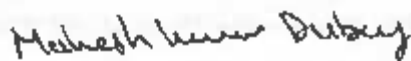
Climate change and disaster risk questions	Yes	No	Remarks
<ul style="list-style-type: none"> • Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)? 		✓	
<ul style="list-style-type: none"> • Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)? 		✓	
<ul style="list-style-type: none"> • Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time? 		✓	



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Instructions:

- This checklist is to be prepared to support the environmental classification of a project.
- This checklist is to be completed with the assistance of an Environment Specialist in a Regional Department.
- This checklist focuses on environmental issues and concerns. To ensure that social dimensions are adequately considered, refer also to ADB checklists and handbooks on (i) Involuntary resettlement, (ii) Indigenous peoples planning, (iii) poverty reduction, (iv) participation, and (v) gender and development.
- Answer the questions assuming the “without mitigation” case. The purpose is to identify potential impacts. Use the “remarks” section to discuss any anticipated mitigation measures.

Country/Project Title:

India/Loan 3055 IND, Uttarakhand Emergency Assistance Project (UEAP)
Construction of Helipad with associated facilities at Barkot, Uttarkashi
District in the state of Uttarakhand
Sub Project: Construction of Multipurpose Hall cum Rescue Centre

Sector Division:

Department of Civil Aviation, Government of Uttarakhand

SCREENING QUESTIONS	Yes	No	REMARKS
A. Project Siting Is the Project area adjacent to or within any of the following environmentally sensitive areas?			
Cultural heritage site		✓	
Protected Area		✓	
Wetland		✓	
Mangrove		✓	
Estuarine		✓	
Buffer zone of protected area		✓	
Special area for protecting biodiversity		✓	
B. Potential Environmental Impacts Will the Project cause...			
Encroachment on historical/cultural area, disfiguration of landscape or potential loss/damage to physical cultural resources?		✓	No such area is within the proposed project site.

SCREENING QUESTIONS	Yes	No	REMARKS
Encroachment on precious ecology (e.g. sensitive or protected areas)?		✓	No trees are affected or no encroachment of precious ecology is anticipated.
Alteration of surface water hydrology of waterways resulting in increased sediment in streams affected by increased soil erosion at construction site?		✓	
Deterioration of surface water quality due to silt runoff and sanitary wastes from worker based camps and chemicals used in construction?		✓	The worker-based camp (if established) will be away from the water body and septic tanks and soak pits will be provided in the camp for sewerage disposal facilities.
Increased local air pollution due to various project construction activities?	✓		There will be slightly increased in Air Pollution due various project construction activities. This Impact shall be temporary, site specific and reversible in nature. This will be mitigated by taking proper mitigation measures.
Risk and vulnerabilities related to occupational health and safety due to physical, chemical, biological, and radiological hazards during project construction and operation?		✓	No such impact will be anticipated
Noise and vibration due to project construction or operation?	✓		No blasting activity is proposed for the project. Noise level will slightly be increase due to different construction activities and it will be temporary and site specific. This will be mitigated by using PPEs, noise enclosures, etc.
Dislocation or involuntary resettlement of people?		✓	Not Involved
Dislocation and compulsory resettlement of people?		✓	Not Involved
Disproportionate impacts on the poor, women and children, indigenous people or other valuable groups	✓		Proposed at the playing ground. Issue of safety and protective measures.
Poor sanitation and solid waste		✓	No such Impact will be anticipated. Local

SCREENING QUESTIONS	Yes	No	REMARKS
disposal in construction camps and work sites and possible transmission of communicable diseases (such as STIs and HIV/AIDS) from workers to local populations?			labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only. Construction Camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management and first aid facilities during the construction period.
Creations of temporary breeding habitats for diseases such as those transmitted by mosquitoes and rodents?		√	No such impact will be anticipated. Proper disposal of liquid effluent will be provided at camps for avoiding water stagnation and creation of breeding grounds
Social conflicts if workers from other regions or countries are hired?		√	No such impact will be anticipated. Local labour will always give preference so that need of construction camp will not require. Migratory labour will be employed in unavoidable circumstances only.
Large population influx during project construction and operation that causes increased burden on social infrastructure and services (such as water supply and sanitation systems)?		√	Large population influx during project construction will not be expected as local labour will always get the preferences. Construction camps (if established) will be provided with necessary water supply, sanitation, storm water drainage, solid waste management etc. during the construction period and necessary provision for rehabilitation or restoration after completion of construction.
Risks and vulnerabilities related to occupational health and safety due to physical, chemical, biological and radiological hazards during project construction and operation?		√	No such impact shall be anticipated
Risk to community health and safety due to the transport, storage and use and/or disposal of materials such as explosives fuel and other chemicals		√	No such impact shall be anticipated

SCREENING QUESTIONS	Yes	No	REMARKS
during construction and operation?			
Community safety risks due to both accidental and natural causes, especially where structure elements or components of the project are accessible to members of the affected community or where their failure could result in injury to the community throughout project construction, operation and decommissioning.		√	Community safety risks due to both accidental and natural causes can be anticipated at extreme cases. Safety issues will be taken due care while designing the various components of the project. The proposed MPH cum rescue centre is being constructed to ensure safety and evacuation of the tourist and community at the times of natural calamity or accident and emergency. Standard Operation Procedure / Guidelines for operation phase will be prepared by Project Proponent.
Generation of solid waste and/or hazardous waste?	√		Solid waste will be generated due to project activities. Generated wastes should be disposed off at proper designated disposal sites.
Use of chemicals?		√	
Generation of wastewater during construction or operation?	√		Waste water will be generated during construction of proposed helipad. Provision of proper disposal of waste water shall be ensured.

Climate change and disaster risk questions	Yes	No	Remarks
The following questions are not for environmental categorization. They are included in this checklist to help identify potential climate and disaster risks.			
<ul style="list-style-type: none"> Is the project area subjected to hazards such as earthquakes, floods, landslides, tropical cyclone winds, storm urges, tsunami or volcanic eruptions and climate 	√		<p>The project site is in the hilly terrain, so there is the chance of landslides.</p> <p>The area lies in hazard prone zone. So the helipad is being proposed for evacuation of the community during the time natural</p>

Climate change and disaster risk questions	Yes	No	Remarks
changes?			calamity. The project site is in the Seismic Zone V as per the Seismic zone map of India and thus prone to earthquake.
• Could changes in temperature, precipitation, salinity or extreme events over the project lifespan affect its Technical and Financial sustainability		✓	
• Are there any demographic or socio-economic aspects of the Project areas that are already vulnerable (e.g. high incidence of marginalized populations, rural urban migrants, illegal settlements, ethnic minorities, women or children)?		✓	
• Could the project potentially increase the climate or disaster vulnerability of the surrounding area (e.g. increasing traffic or housing in areas that will be more prone to flooding by encouraging settlement in earthquake zones)?		✓	
• Is siting and/or routing of the project (or its components) likely to be affected by climate conditions including extreme weather related events such as floods, droughts, storms, landslides?		✓	The project site is in the hilly terrain, so there is the chance of landslides.
• Would weather, current and likely future climate conditions (e.g. prevailing humidity level, temperature contrast between hot summer days and cold winter days, exposure to wind and humidity		✓	


Climate change and disaster risk questions	Yes	No	Remarks
hydro-meteorological parameters likely affect the selection of project inputs over the life of project outputs (e.g. construction material)?			
• Would weather, current and likely future climate conditions, and related extreme events likely affect the maintenance (scheduling and cost) of project output(s)?		✓	
• Would weather/climate conditions and related extreme events likely affect the performance of project output(s) throughout their design life time?		✓	



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UCADA ADVERTISEMENT

परियोजना प्रबन्धन ईकाई
 उत्तराखण्ड डिजिटल रिकवरी प्रोजेक्ट एवं
 उत्तराखण्ड ईमरजेंसी असिस्टेंस प्रोजेक्ट
 सिडकुल बिल्डिंग 29 आईआईई (आईटी. बॉक) सहायवाता रोड
 देहरादून-248001 उत्तराखण्ड

आपदा राहत एवं पुनर्वास को अन्तर्गत आवास, स्वयं, पुनर्निर्माण योजना के तहत डेसीपेट, शिथिल वृद्धिगत स्वकारी भवन, पर्वत विद्या की परिस्थितियों, बहुउद्देशीय भवन एवं एडआरपी हटस बनाने का रहे है। उपरोक्त से संबंधित किसी भी समस्या के निवारण के लिये परियोजना प्रबन्धन ईकाई एवं जनसह सार पर समस्या निवारण प्रकोष्ठ समित किये गये है। किसी संदर्भ तुरंत निम्नलिखित है-

इन संपर्क सूत्रों पर कार्यालय दिवसों एवं कार्यालय समयोधि में संपर्क किया जा सकता है।

केंद्रीय समस्या निवारण प्रकोष्ठ दूरभाष संख्या 0135-2706576

परियोजना प्रबन्धन ईकाई देहरादून ई मेल-grievancepmu@gmail.com

जनपद	गोडल अधिकारी	दूरभाष संख्या
नन्दाद्वारा	श्री अशोक कुमार / श्री सुनील कुमार	8859534022 / 8859534026
धर्मशाली	श्री सुनील कुमार जोशी	9411352138
उत्तरकाशी	श्री देवेंद्र शर्मा	9410350338
बागेश्वर	श्री विद्या सुमरी	8133517518
पिथौरागढ़	श्री अरुण एवं राजा	9412079945
धनकुटा	श्री राजेश जोशी	9412329757
सन्ताली	श्री सुनील पांडे	9412347265
नेपालगढ़	श्री अशोक कुमार	9412347265
उत्तरमिथिला नगर	श्री अशोक शर्मा	9417073400
दिल्ली	श्री अशोक शर्मा	---
सिद्धार्थ	---	---
देहरादून	श्री अशोक शर्मा	9412347265
पौड़ी	श्री अशोक शर्मा	9412347265

LEAFLET FOR PUBLIC INFORMATION



संक्षेप सूचनात्मक पत्रिका
(Leaflet for Public Information)

एशियाई विकास बैंक द्वारा सहायता प्राप्त
"उत्तराखण्ड आपातकालीन सहायता परियोजना"
(Uttarakhand Emergency Assistance Project Assisted by ADB)
 दूरभाष संख्या: 0135-2608081 E-Mail: plu.ca.uk@gmail.com

परियोजना क्रियान्वयन इकाई
उत्तराखण्ड नागरिक उड्डयन विकास प्राधिकरण - देहरादून
 (Project Implementation Unit Uttarakhand Civil Aviation Development Authority)

1. प्रस्तावना (Introduction)

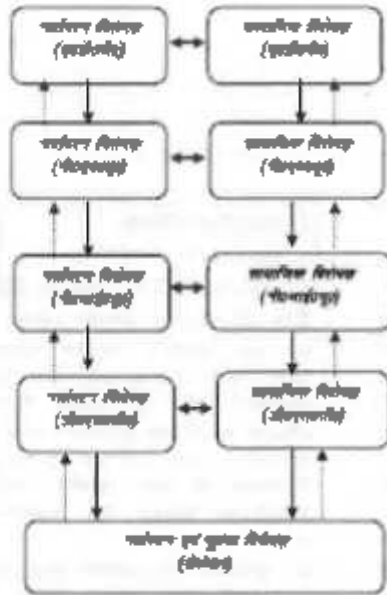
उत्तराखण्ड एक महत्त्वपूर्ण राज्य है, जो 3 नवंबर 2000 को पूर्ण रूप से स्वतंत्र राज्य के रूप में अस्तित्व में आया। विकास अभियानों वाले राज्य के रूप में राष्ट्रीय स्तर पर अर्थव्यवस्था को बढ़ावा देने के लिए राज्य में अर्थव्यवस्था को सुदृढ़ बनाने के लिए राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है।

2. उद्देश्य (Objectives)

विमान एवं पर्यटन एक ही विमान को प्रोत्साहित है। यह आर्थिक विकास के लिए एक महत्वपूर्ण भूमिका निभाता है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है। राज्य में आवागमन एवं संचार विकास अभियानों को प्राथमिकता देना आवश्यक है।



पर्यावरण एवं सामाजिक दुखद की घटिकाओं से निरोधकों का परामुखन



**4. प्राकृतिक पर्यावरण के अंग
(Parts of Natural Environment)**

- (क) भौतिक पर्यावरण
(Physical Environment)
- > जल संचयन।
 - > वृक्ष संरक्षण।
 - > पर्यावरण प्रदूषण (वायु, जल, ध्वनि इत्यादि)।
 - > अवांछित पराधीन की निवारण।
 - > जलिय एवं धातु संचयन।
 - > सहायकारी इत्यादि।

- (ख) जैविक पर्यावरण
(Biological Environment)
- > प्रजातिय वृद्धि में आधुनिकता प्राप्त।
 - > अन्य जीव एवं उनके प्राकृतिक आवास (जल, जलवायु, ध्वनि, ध्वनि, गुरुत्वाकर्षण वृद्धि इत्यादि)।

- > वन, जलसंधारण, प्राकृतिक संरक्षण, जल-संयोजक विषय इत्यादि।
- (ग) सामाजिक एवं सांस्कृतिक पर्यावरण
(Socio-cultural Environment)
- > रोजगार के स्रोत।
- > विद्यालय, स्वास्थ्यसंरक्षण, अस्पताल इत्यादि।
- > सामाजिक संरक्षण (नैतिक, नैतिक, सुव्यवस्था इत्यादि)।
- > सांस्कृतिक एवं सांस्कृतिक संरक्षण (विशेष)।
- > अवांछित पराधीन की निवारण हेतु अन्य स्थान एवं विविध कार्य हेतु जो कार्य वृद्धि।

PUBLIC CONSULTATION ATTENDANCE SHEET

ATTENDANCE SHEET FOR FOCUS GROUP DISCUSSION

Name of the Site : ...Amra...Shri G. S. Tyagi Block : ...Chhatis... District : ...Delwara...

Sl No	Name	Phone Number	Subjects Discussed	Suggestions	Signature of Participant
1	जगजीत सिंह चौहान	981666767	ownership of land	land is suitable	
2	शोनी कला शर्मा	8449696363	site, consent of	construction should	
3	Sunil Kati (VPO)	9112922929	people of around	ke-taleem with	
4	Dhivender Singh	9410124438	caste and low	participation of	
(M. G. S.)	MURAT PARIKH	54107702	12-0894969715	Panchayat, employ.	
6	सुदीर सिंह	9816151504	Ki Tyuni, suitability	must should be	
7	ज. ए. नैन (A.C.I)	9411125032	village level problems	given to	
8	दी. ए. ए. शर्मा		and other issues - local people.		
9			economic issues	beautification of	
10				site / stadium	
11				should be included	
12				in the design.	

Signature
22.06.2015

ATTENDANCE SHEET FOR FOCUS GROUP DISCUSSION

Name of the Site: Helipad Barket Block: Naogaon District: Uttarakashi

Sl No	Name	Phone Number	Subject Discussed	Suggestion	Signature of Participant
1	महमान सिंह चौहान	9456148825	land ownership	All land demarcated	<i>[Signature]</i>
2	डॉ. सुरज सिंह चौहान	9410750077	compensation pro-	tection state be	<i>[Signature]</i>
3	म. सुरज सिंह	9458524053	vided, impact on	purchase.	<i>[Signature]</i>
4	म. सुबोधन सिंह	9410398379	of Helipad area	Road connectivity	<i>[Signature]</i>
5	म. विवेक सिंह	9429113234	specific socio-	with Helipad install	<i>[Signature]</i>
6	डॉ. एन. राजा	9429113234	economic problems	wood should be made	<i>[Signature]</i>
7	हिमाल सिंह अग्रवाल (RSI)	9366605174	Environmental	to make product	
8			problems.	participation needs to	
9				be ensured during	
10				construction and operation.	
11				Compensation should	
12				be provided before	

Confirmation of Helipad *[Signature]* Signature & Date

[Signature]
23-06-2015

ATTENDANCE SHEET FOR FOCUS GROUP DISCUSSION

Name of the Site: Mehera Block: Tihatwan District: Uttarkashi

Sl No	Name	Phone Number	Subject Discussed	Suggestions	Signature of Participant
1	विजयपाल सिंह	941158031	Importance of	Employment should	
2	मिमान सिंह	962100577	site availability	be given to local	
3	विजय सिंह	941019511	Associated problems	people during con-	
4	रम सिंह	998124793	Socio-economic	structure.	
5	शशि जगदीश	989712691	problems of the	No objection in	
6	प्रेम सिंह		area.	multiple construction.	
7	उदय सिंह	8057066704		The approach road	
8	केशव सिंह			to village Dhanu	
9	फालग सिंह	9410753487		need to be	
10	अमर सिंह	895898037		strengthened as	
11	आनंद सिंह			soon. During discus-	
12	लक्ष्मण सिंह			priority should be	

Given to Village Panchayat Dhanu
 Signature:
 Date: 25-06-2015
 Focus Group Facilitator

ATTENDANCE SHEET FOR FOCUS GROUP DISCUSSION

Name of the Site: Kotdwara Block: Dugadda District: Paini Garhwal

Sl.No	Name	Phone Number	Subjects Discussed	Suggestions	Signature of Participants
1	Dr. Kishor Nathpal	9412949794	BEL Ground -	SDM has suggested	<i>[Signature]</i>
2	Sh. S. S. Bolnwal	8680920205	Issue of NOx	that the land is	<i>[Signature]</i>
3			was discussed	owned by Dept. of	
4			with SDM. Kotdwara	Revenue while	
5				under possession	
6				of BEL. In the	
7				case challenge order	
8				PPAet was done	
9				and the use	
10				is with district	
11				Judge court.	
12				He has suggested	
				for selecting a new	
				area for the purpose	<i>[Signature]</i>

ATTENDANCE SHEET FOR FOCUS GROUP DISCUSSION

Name of the Site: G/E Jaiharikhal, Lohardaga Block: Jaiharikhal District: Pasari Garhwal

Sl No	Name	Phone Number	Subjects Discussed	Suggestions	Signature of Participants
1	Ms Negi, R1		1. The members	The principal	-
2	C. M. Negi, Principal G.E. Jaiharikhal		were narrated about the construction	and the other	-
3	Anil Kulkarni, RS1,	9411510012	of school, its	members has	
4	Pankaj Kundra, Junior class	997129655	purpose, and	given their	
5	Suryakant,	960414336	other related issues	consent for completion	
6	Noman Singh		Telomeric discussion with principal	of school.	
7	Nahabin Singh	9634791925	was also done		MS
8	Bhawan Prakash	9568405646	for the purpose		
9	Saurabh P. Kulkarni Chairman, SMC	7579023658	of obtaining his consent		-
10			and no objection		
11			to construction		
12			of school on school ground		

Signature of

Public Consultation


Name of Sub-Project Location
 Tehsil
 District
 Name of Project
 Date of Consultation

Gawalikund and Ukhimath
 Ukhimath
 Rudrapur
 Civil Aviation: UEAP (Phase-II)
 12-13.1.08.2014

D) Gawalikund Cite


Sl. No.	Name	Address	Mobile No.	Remark	Sign
1	Ex. Rajharanjan	D.M. Rudrapur		Helped construction at Gawalikund	---
2	Mr. Rishabh K. Gupta	A-207		discussion about	---
3	Mr. Om Prakash	R.O. to A-207	01364688800	Alternative of	---
4	Mr. Shashi Kant	Project Office (ODCH)	9456577162	UEAP/ODCH project.	---
5	Mr. Sumit Choudhary	Social Worker	8857888561		---
6	Mr. Tej Singh	Masha Messon	8057320579	discusses	---
7	Mr. Madhoo Darnoda	SEC (ODCH)	9416577163	about	---
8	Mr. Rakesh Dwan	Manager (ATI)	806407511	alternate	---
9	Mr. Sachin Surti	DIIS Expert	806407505	site of	---
10	Ex. H.K. Bagwari	Director (NDA)	7536867466	Gawalikund	---
11	Mr. Surender Kumar	PHD Guest House			
12	Mr. Prem Lal	Rohang, Fateh			
13	Mr. Suraj Singh	Village - Akhaur			
14	Mr. Chhagan Raj	Sen R.O. Ukhimath		Helpful should be done at Dehra Dun	
15	Mr. Anwar Singh	Village - Jaura	789562299	2-1-2012 12-12-2014	
16	Mr. Kavita	---	---	Kothi near	Kavita
17	Mr. Geeta Singh	---	---	to Lalipady	Geeta Singh
18	Mr. Srinidhi Lal	Maitkhand	---	for emergency	Srinidhi Lal
19	Mr. Vikram Lal	---	967697076	and disaster	Vikram
20	Mr. Teekaram Lal	Fateh	9639176298	preparation.	Teekaram
21	Mr. Kishan	Gawalikund	8758508920		Kishan
22					



 Social Specialist
 PII: CA (UEAP: ADB)
 Dehradun, Uttarakhand


 Environmental Specialist
 PII: CA (UEAP: ADB)
 Dehradun, Uttarakhand

(D) GIC UKhimath.

Sl. No.	Name	Address	Mobile No.	Remarks	Signature
23.	Mr. S. P. Uniyal	Teohitkhar	7410787777	Instructed to form	
24	Mr. M.S. Khat	Prinipal GC.	9799558249	Don't know	
25	Mr. Santosh Mr.	Kotwa	3859504061	Map provided	
26	Mr. Jai Bhar Singh	Revenue depalt.	—	by Revenue depalt	
27.					
28.					
29.					
30.					


Social Specialist
PIU: CA (UEAP: ADB)
Dehradun, Uttarakhand


Environmental Specialist
PIU: CA (UEAP: ADB)
Dehradun, Uttarakhand

सहायक निरीक्षक
गो. उ. वि. प्र.
देहरादून, उत्तरांचल
दि. 15/09/2015

SOME PHOTOGRAPHS OF PUBLIC CONSULTATION



Plate – 1: PCM at Lansdwone (Pauri)



Plate – 2: PCM at Barkot (Uttarkashi)



Plate – 3: PCM at Kashipuri (Pauri)



Plate – 4: PCM at Manera (Uttarkashi)



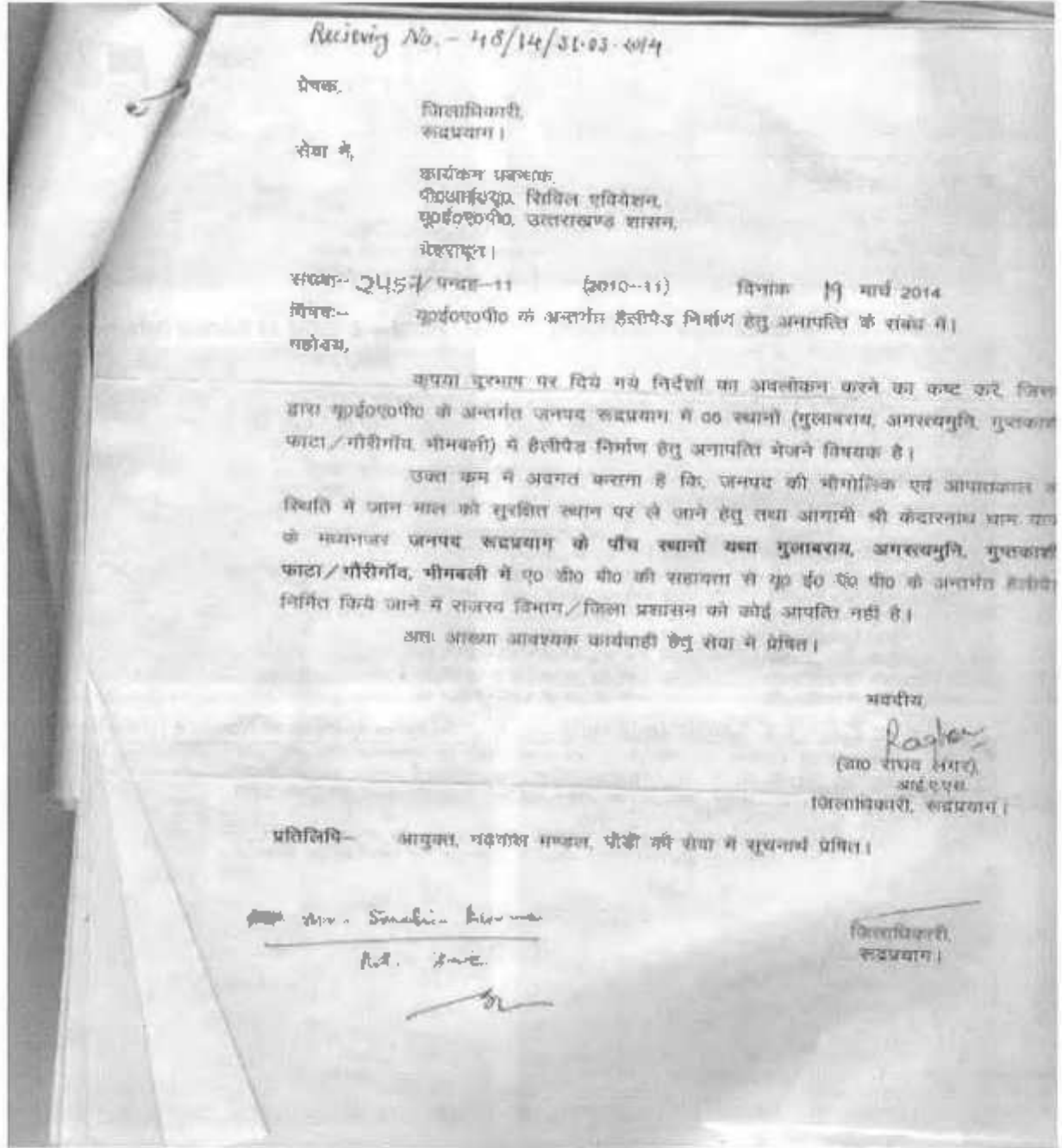
Plate – 5: PCM at Ukhmath (Rudrapryag)



Plate – 6: PCM at Tyuni (Dehradun)

NO-OBJECTION CERTIFICATES (NOCs)

Agastyamuni (District - Rudraprayag)



Receipt No. - 48/14/31-03-2014

प्रेषक,
जिलाधिकारी,
रुद्रप्रयाग।
सेवा में,
कार्यक्रम प्रबंधक,
पी०आर०डी० विविध एवियेशन,
यू०ई०ए०पी०, उत्तराखण्ड शासन,
देहरादून।

संख्या- 2457/पन्ना-11 (2010-11) दिनांक 19 मार्च 2014
विषय- यू०ई०ए०पी० के अन्तर्गत हिलीयैड निर्माण हेतु अनापत्ति के संबंध में।
महोदय,

कृपया पुराना पर दिये गये निर्देशों का अवलोकन करने का कष्ट करे, जिस
द्वारा यू०ई०ए०पी० के अन्तर्गत जनपद रुद्रप्रयाग में 00 स्थानों (मुलाबराय, अगस्त्यमुनि, मुल्लाबराय
फाटा/गौरीगौव, भीमबली) में हिलीयैड निर्माण हेतु अनापत्ति भेजने विषयक है।
उक्त काम में अवगत करवा है कि, जनपद की भौगोलिक एवं आपदाजनक
स्थिति में जान माल को सुरक्षित स्थान पर ले जाने हेतु तथा आगामी श्री केंदरनाथ धाम यात्रा
के मस्यौदा जनपद रुद्रप्रयाग के पाँच स्थानों यथा मुलाबराय, अगस्त्यमुनि, मुल्लाबराय
फाटा/गौरीगौव, भीमबली में 50 बी० पी० की सहायता से यू० ई० ए० पी० के अन्तर्गत हिलीयैड
निर्मित किये जाने में राज्य विभाग/जिला प्रशासन को कोई आपत्ति नहीं है।
अतः आख्या आवश्यक कार्यवाही हेतु सेवा में प्रेषित।

भवदीय
Rajesh
(ज० राघव शर्मा)
अई०एस०
जिलाधिकारी, रुद्रप्रयाग।

प्रतिलिपि- आयुक्त, महोदय सचिव, पी०डी० की सेवा में सूचनात्मक प्रेषित।

Mr. Sanjeev Kumar
Rd. Prayag

जिलाधिकारी,
रुद्रप्रयाग।

Ukhimath (District - Rudrapur)

UKIMATH

Handwritten signature

श्रेणिक

निवासीतादी
उत्तराखण्ड

सेवा में

कार्यक्रम प्रवर्धन
परिचालना विभाग प्रमुख
पुणेईएचपीडी (विशेष एजिडेंट)
उत्तराखण्ड सरकार
पुणेईएचपीडी, हैलीपीठ, महाराष्ट्र
पुणेईएचपीडी, हैलीपीठ

संख्या- 438/4008-11 (2010-11) दिनांक 30 अगस्त 2014
विषय- उत्तराखण्ड में हैलीपीठ/हैलीपीठ/हैलीपीठ निर्माण हेतु भूमि के सम्बन्ध में।
महोदय,

कृपया उपरोक्त विषयक अपने पत्र संख्या-438/4008-11 (विशेष एजिडेंट)/पुणेईएचपीडी (14)/2014-15 दिनांक 19-07-2014 का अवलोकन करने का कष्ट करें, जो उत्तराखण्ड सरकार में प्रस्तावित हैलीपीठ निर्माण स्थल कक्षा ऊखीमठ (जी०आर०ई०पी० प्रवर्धन) गौरीकुण्ड के कार्यालय में अस्थापित करने विषयक है।

उक्त के रूप में अवगत करना है कि ऊखीमठ (जी०आर०ई०पी० प्रवर्धन) के सम्बन्ध में इस कार्यालय के पत्र संख्या-3908/15-11 (2010-11) दिनांक 28 फरवरी 2014, को द्वारा आस्था अथवा मुख्य सचिव, उत्तराखण्ड सरकार/सीईओ, उत्तराखण्ड नगरिक उद्वेगन विकास प्राधिकरण, देहरादून को पूर्व ही प्रेषित की जा चुकी है। परन्तु में पुनः उप विभागीयकारी, ऊखीमठ से आस्था प्राप्त की गई। एम विभागीयकारी, नाथीगड द्वारा 10 10 का 100 प्राधिकरण, ऊखीमठ के हैलीपीठ निर्माण हेतु फर्मापाथाई, 10 10 का 100 ऊखीमठ के अस्थापित पत्र एम पु-अभिलेखी सहित आस्था उपलब्ध कराई गई है।

उक्त की आतिथिका एमएल गौरीकुण्ड के हैलीपीठ के सम्बन्ध में अवगत कराया गया है कि अस्थाई खण्ड, लोक निर्माण विभाग, मुद्राकारी द्वारा एमएल गौरीकुण्ड में हैलीपीठ का निर्माण कार्य किया जा रहा है, जो अस्थापित के निर्माणशील है। उक्त निर्माणशील हैलीपीठ की भूमि लोक निर्माण विभाग के नाम दर्ज अस्थापित है। वन विभाग से प्राप्त आस्था/पुस्तक अस्थापित गौरीकुण्ड के अस्थापित -सी 2।

उक्त इस कार्यालय के पत्र संख्या-3908/15-11 (2010-11) दिनांक 28 फरवरी 2014 की अस्थापित एमएल गौरीकुण्ड के अस्थापित 10 10 का 100, हैलीपीठ विभाग, 2013-14

Handwritten signature

(02)

दिनांक 28 अक्टूबर 2014 को उप जिलाधिकारी, रुद्रप्रयाग द्वारा अधिसूचित किए गए पत्रों के संलग्न
के अन्तर्गत कार्यवाही एवं आवश्यक कार्यवाही हेतु सेवा में प्रेषित किया जा रहा है।

संलग्न- एकतानुसार

भवदीय

(200 सचिव लोगर)
आई.एस.

जिलाधिकारी, रुद्रप्रयाग।

प्रतिलिपि-

साथकत निदेशक, 50/20/2014, सिविल विभाग, 28 III (IT PARK)
सह-कार्यवाही के, देहरादून को पत्र संख्या-108/आई.एस./2014 दिनांक
25-08-2014 के पत्र में सूचनाएं प्रेषित।

जिलाधिकारी
रुद्रप्रयाग।

Srinagar (District – Pauri Garhwal)

Receiving No. 94/12/23.05.2014

Page No. 188
Form No. 22/1/11/2011

संस्था: Pauri Garhwal District
 जिला: Pauri Garhwal


सेवा: प्रशासनिक प्रशासन
 सहायक प्रशासक (विशेष प्रशासन)
 प्रशासनिक भवन

क्रमांक: 94/12/23.05-05/राजकी-2014 दिनांक 23/05/2014


विषय: सहायक प्रशासक (विशेष प्रशासन) द्वारा प्रेषित अधिसूचना संख्या 94/12/23.05-05/राजकी-2014 का सम्बन्ध में।


सारांश:
 उपरोक्त विषयक अग्र मुख्य सचिव प्रशासनिक प्रशासन कानून के क्रमांक 104/PIU-CAURAP(1)2004 दिनांक 02/5/2014 के द्वारा अधिसूचना प्रेषित है कि प्रशासनिक प्रशासन के अंतर्गत प्रथम श्रेणी में प्रो. (पी.पी.)/जी.एम. के.पी.के. के द्वारा विमानों के अत्याधुनिक प्रशासन करने के निर्देश दिये गये हैं। विमानों के अत्याधुनिक प्रशासन के अंतर्गत प्रथम श्रेणी में प्रो. (पी.पी.)/जी.एम. के.पी.के. के अत्याधुनिक प्रशासन करने के संबंध में एक प्रस्ताव प्रेषित किया गया। प्रस्ताविकात्मक प्रो. (पी.पी.)/जी.एम. द्वारा विमानों के अत्याधुनिक प्रशासन के अंतर्गत प्रथम श्रेणी में प्रो. (पी.पी.)/जी.एम. के.पी.के. द्वारा निर्देश अधिसूचना प्रेषित करके विमानों के अत्याधुनिक प्रशासन करने की सूचना दी गयी है।

अतः प्रो. (पी.पी.)/जी.एम. के.पी.के. के द्वारा प्रेषित अधिसूचना के अंतर्गत प्रथम श्रेणी में प्रो. (पी.पी.)/जी.एम. के.पी.के. के अत्याधुनिक प्रशासन करने के संबंध में आवश्यक कार्रवाई के लिए प्रेषित की जायेगी।



 P. K. Singh
 सहायक प्रशासक (विशेष प्रशासन)

प्रतिवेदि: अग्र मुख्य सचिव प्रशासनिक प्रशासन को क्रमांक 94/12/23.05-05/राजकी-2014 के अंतर्गत प्रेषित।

DPM (PIU-CA)

 सहायक प्रशासक (विशेष प्रशासन)
 23/05

Received by

 23/05/2014

23/05



Barkot and Manera (District - Uttarkashi)

BARKOT

254/15

Dt. 25.09.2014



प्रेषक,
जिलाधिकारी,
उत्तरकाशी।

सेवा में,
कार्यक्रम निदेशक,
सुसंरक्षित (विधिया-संशोधन)
सहास्रद्वारा रोड, देहरादून।

संख्या-3323/अत-01 (2013-14)

दिनांक 02 अक्टूबर, 2014

विषय:- सुसंरक्षित क्षेत्रों के विकास/संशोधन/संरक्षण के लिए भूमि के आवंटन में।

संदर्भ:- उपरोक्त विषयक सूचना इस कार्यालय को पत्र संख्या 7221/अत-01 (2013-14) का संदर्भ प्रदान की, जिसके द्वारा कार्यक्र-6 पर अंकित नक्शे पर निर्मित अंकित किया गया है, में अधिकाधिक संशोधन किया गया है। चूंकि इस क्षेत्र के अनेक क्षेत्रों में हीरोपीड/हेलीपीड/हेलीटोप के निर्माण के लिए अनेक चर्चित स्थानों के अनापत्ति प्रमाण-पत्र निर्धारित प्रमाण पर उपलब्ध कराए जाने की आवश्यकता पड़ी है।

उपरोक्त के सम्बन्ध में अवगत कराया है, कि चूंकि ये चर्चित स्थानों के सम्बन्ध में बतलाया जा चुका है, जो कि निम्न प्रकार है:-

1- द्वितीय विधित हेलीपीड:-
प्रशासनिक अधिकारी, उत्तरकाशी ज. प्रभाग उत्तरकाशी द्वारा अपने पत्र संख्या 2367/12-1 दिनांक 04.03.2014 के द्वारा अवगत कराया गया है, कि उत्तर काश्मिर, उत्तरकाशी जिले के पत्र संख्या 1772/7-1-2008-800 (1763)/2006 दिनांक 02.08.2008 के द्वारा द्वितीय हेलीपीड निर्माण हेतु 0.65 हे० आरक्षित भूमि लोक निर्माण विभाग भद्रवादी को हस्तांतरित की जा चुकी है। हस्तांतरण के सिद्ध संख्या 1 से 2 के अनुसार हस्तांतरित भूमि क्षेत्र प्रयोजन एकेवी सोलरिडिओ को ही हस्तांतरित की गई है।

2- भद्रवादी/भनेरी:-
मुख्य शिक्षा अधिकारी, उत्तरकाशी द्वारा अपने पत्र संख्या 1613/5 का 10 भूमि हस्तांतरण/2013-14 दिनांक 13 अक्टूबर, 2014 के द्वारा अवगत कराया गया है, कि भद्रवादी/भनेरी में विद्यालय संघर्षित है तथा हेलीपीड निर्माण हेतु अवधित की गई है।

3- भनेरी (विलोड):-
सहास्रद्वारा भद्रवादी द्वारा अवगत कराया गया है, कि यह स्थल जय विलोड को संबंधित छाता संख्या-48 कुल क्षेत्रफल 3.128 हे० के अन्दरगत भनेरी खेल स्टेडियम में स्थित है जहां पर विलोड स्तरीय व अन्य खेलकूद प्रतिष्ठानों पर आश्रित हो रही है। उक्त भूमि निदेशक खेलकूद विभाग, उत्तर प्रदेश सरकार के पास रजिस्टर है। विलोड शिक्षा अधिकारी, उत्तरकाशी द्वारा अवगत कराया गया है, कि अनापत्ति के सम्बन्ध में प्रकरण शीघ्र स्तर पर विचारार्थ है।

4- सुसंरक्षित:-
उप जिलाधिकारी, देहरादून द्वारा अपने पत्र संख्या 0090/अत-01/2012 दिनांक 24.07.2014 के द्वारा अवगत कराया गया है, कि सुसंरक्षित में हेलीपीड निर्माण हेतु निर्मा भूमि आवंटन हेतु प्रस्तावित है। प्रस्तावित भूमि पर संपत्त-समय पर हेलीपीड निर्माण/संशोधन कराया जा रहे है। वर्तमान में भूमि आवंटन/संरक्षण नहीं है। हेलीपीड हेतु भूमिधारी भा. अनापत्ति प्रमाण पर संलग्न है।

Handwritten signatures and initials: 'MICA' and 'Kuj'

Program Manager
PIU-CA (JEAP)
Sahastrdvara Hallipad
Dehradun.

5- घरवाली हैलीपैट-

इस स्थान पर हैलीपैट का निर्माण किए गए हैं। भूमि उपखंड विभाग भारत सरकार के नाम पर है।


6- पेटी :-

जय जिलाधिकारी, पुणेला द्वारा अपने पत्र संख्या मेमो/ हैलीपैट/2014 दिनांक 01 फिब्रुवारी, 2014 द्वारा अग्रज काटाया गया है, कि यह भूमि शिक्षा विभाग को इस्तेमाल की गई है, तथा महामन्त्र ने कर्मिका शिक्षा विभाग का है। जतः उपरोक्तानुसार एवं निर्धारित प्रकल्प पर हैलीपैट/हैलीपैट/हैलीपैट के सम्बन्ध में आदेश निम्न प्रकार से प्रेषित।

क्र. सं.	प्रस्तावित भूमि	खसत संख्या	तहसील	कुल क्षेत्रफल (हे.)	वर्तमान स्थापित	टिप्पणी
1-	हर्षत शिक्षित हैलीपैट	लोक निर्माण विभाग	भटवादी	6500 वर्ग मीटर	हैलीपैट विभाग	हैलीपैट निर्मित है।
2-	भटवादी	3660, 3667, 3668, 3676, 3677, 3668, 3730, 3731, 3732, 3733, 3730, 3734, 3736, 3738, 3740, 3742, 3744	भटवादी	1000 वर्ग मीटर	शिक्षा विभाग	अनापत्त प्राप्त है।
3-	खेरी	2716	भटवादी	4140 वर्ग मीटर	शिक्षा विभाग	अनापत्त प्राप्त है।
4-	मनेरा (हैलीपैट)	662, 663, 665, 656, 1042, 1043, 1044, 1048, 658	भटवादी	40000 वर्ग मीटर	शिक्षा विभाग	अनापत्त के सम्बन्ध में अग्रज काटाया गया है, कि फलवारी राकन स्तर पर विचारणीय है।
5-	घरवाली	579, 574, 345, 349, 500, 583, 582, 591, 572, 347, 570, 571, 580, 581, 534, 569, 538, 575, 348, 535 कुल खसत 0.250 हे।	बदकोट	2790 वर्ग मीटर	उपखंड विभाग भारत सरकार के नाम पर	हैलीपैट निर्मित है।
6-	बदकोट	2326, 2337, 2338, 2339, 2340, 2341, 2342, 2344, 2343, 2338, 2345, 2346, 2375, 2347, 2348, 2354, 2349, 2350, 2351, 2352, 2353, 2355, 2356, 2357, 2359, 2361, 2362, 2364, 2365,		11930 वर्ग मीटर	भटवादी की भूमि उपखंड विभाग के नाम पर	भटवादी की अनापत्त की कार्रवाई पर 2017 में अनापत्त प्राप्त है।

		2372,2384,2375,2374,2376, 2377,2378,2379,2380,2381, 2382,2383,2385,2386, 2393,2394,2360 कुल 1.223 है				
7-	उत्तरकाशी जिला	शिक्षा विभाग		3233 वर्ग मीटर	शिक्षा विभाग	अनापत्ति प्राप्त

सं: उत्तरकाशी जिला मुख्यालय कार्यालयी दस्तावेज प्रमाण

भवदीय,

 श्री 0 रमेशचंद्र)
 निहालिकारी,
 सहायक अधिकारी।

Kotdwar (District - Pauri Garhwal)



FAX NO. : 01364222090

Dr. Uts. 2015

E-Mail: dngarhwal@gmail.com
Phone 01364-222209/Fax-222090

प्रेषक,

जिलाधिकारी
गढ़वाल ।

सेवा में,

कार्यक्रम प्रबन्धक
परियोजना विद्यालय इकाई
सू०ई०ए०पी०(सिविल एवियेशन)
उत्तराखण्ड देहरादून ।

संख्या डी०ए० / 34-ए.एन.सी. -2015 पी०डी अक्टूबर 14, 2015

विषय- सू०ई०ए०पी० के अन्तर्गत कोटद्वार में हैलीपैड निर्माण हेतु भूमि का घयन ।

उपरोक्त विषयक मुख्य सचिव महोदय की अध्यक्षता में दिनांक 04-9-2015 को आहुत कीडियो कान्फ्रेंसिंग में निर्देश दिये गये थे कि हैलीपैड निर्माण हेतु कोटद्वार में अन्य का घयन किया जाय, जिसके क्रम में उपजिलाधिकारी कोटद्वार को पत्र प्रेषित किया गया, उपजिलाधिकारी कोटद्वार ने अपने पत्र संख्या 2684 / ए०एन० के द्वारा जवाबत किया गया है कि-

1- ग्राम कोटद्वार पट्टी ब्लैक लक्ष्मील कोटद्वार के अन्तर्गत खसरा संख्या 35 रकबा 2.112 हे० मध्ये 1.273 हे० भूमि नदी श्रेणी 6 (1) अक्षुबिक भूमि/जलमग्न भूमि का प्रस्ताव हैलीपैड निर्माण हेतु घयन किया गया है,वर्तमान खसरा संख्या 43 पर प्रस्तावित भूमि श्रेणी 6-1 अक्षुबिक भूमि-जलमग्न भूमि नदी के नाम दर्ज है,इसके अलावा प्रधान ग्राम पंचायत ग्रास्टनग्रज ने भी अनापत्ति प्रमाण दिया गया है ।

अतः अख्या सेवा में प्रेषित ।

भवदीय,

संलग्न:-सद्योपरि ।

(पी०डी०जी०आर०)
अपर जिलाधिकारी,
पी०डी गढ़वाल ।

Lansdowne (District - Pauri Garhwal)

पौरीगढ़
E-Mail: paugad@paugad.com /
Phone No: 106-22210 Fax: 2298

प्रेषक,
जिलाधिकारी,
मंडलालय ।
प्रत्यक्ष,
परियोजना निष्पादन इकाई,
फूडोस्टोपीओ (निरपेक्ष एक्टिवेशन),
पूजाबा, पुन ईसीडब्ल्यू, राठनवाला,
ग्राम कुल्दान देहरादून ।

233/12 Dt- 10/08/15


संख्या 7287/44 ए.ए.एल.सी. -2015 पीसी काम 2015


विषय- फूडोस्टोपीओ के अन्तर्गत ईसीडब्ल्यू नियाम/जीर्णोद्धार हेतु प्रपनित भूमि के अनापत्ति प्रमाण पत्र के सम्बन्ध में।

उपरोक्त विषयक अपने कार्यालय पर राख्य पत्र संख्या 88/पीओ अर्द्ध 8 गुरु (निरपेक्ष एक्टिवेशन)/फूडोस्टोपीओ(2) 2015-16 दिनांक 20-6-2015 को का संदर्भ ग्रहण करने का आशय है जिसके क्रम सम्बन्धित तहसील उपजिलाधिकारियों को निर्धारित प्रारूप पर सूचना उपलब्ध कराने हेतु पत्र प्रेषित किया गया जिसके क्रम उपजिलाधिकारी तै-सभीय तथा उपजिलाधिकारी यमकेश्वर को द्वारा ही सहा सूचना निर्धारित प्रारूप पर प्रेषित की गयी।

आत तहत सूचना का प्रारूप का र्पवाही हेतु प्रेषित ।

संलग्न- सम्पत्ति ।

भवदीय,
(पीओ/डी/काम)
अपर जिलाधिकारी,
मंडलालय।


✓
Program Manager
PRO-CA HEAD
106-22210

Tyuni (District – Dehradun)

देहरादून में डीसी/डीसी/डीसीएम निर्माण हेतु 20-वर्षीय प्रस्ताव-20
 क्रमांक: यू.डी.ए. संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014

क्र. सं.	व्यक्तिगत नाम	वर्ष/मा	व्यवसाय	कुल संतान	वर्षीय आय	टिप्पणी
1	मनदी लाल/मनदी लाल के बच्चे	50	कृषि	24 बच्चे	100000	यह विभागीय स्तर पर निर्माण हेतु 20-वर्षीय प्रस्ताव संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014 के अंतर्गत है।
2	मनदी लाल	70	कृषि	24 बच्चे	100000	यह विभागीय स्तर पर निर्माण हेतु 20-वर्षीय प्रस्ताव संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014 के अंतर्गत है।
3	मनदी लाल	80	कृषि	1100 बच्चे	100000	यह विभागीय स्तर पर निर्माण हेतु 20-वर्षीय प्रस्ताव संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014 के अंतर्गत है।
4	मनदी लाल/मनदी लाल के बच्चे	80	कृषि	1100 बच्चे	100000	यह विभागीय स्तर पर निर्माण हेतु 20-वर्षीय प्रस्ताव संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014 के अंतर्गत है।
5	मनदी लाल/मनदी लाल के बच्चे	80	कृषि	1100 बच्चे	100000	यह विभागीय स्तर पर निर्माण हेतु 20-वर्षीय प्रस्ताव संख्या 229/2014/2015 (डीसी/डीसीएम/डीसीएम) (12)/2014-15 दिनांक 04-10-2014 के अंतर्गत है।

प्रमाणित किया जाता है कि उपरोक्त प्रस्ताव में डीसी/डीसी/डीसीएम के निर्माण हेतु प्रत्येक वर्ष की आय की जांच की जा चुकी है।

(हस्ताक्षर)
 डीसी/डीसी/डीसीएम

