

**BEFORE THE NATIONAL GREEN TRIBUNAL
PRINCIPAL BENCH, NEW DELHI**

(By Hybrid Mode)

Original Application No. 561/2022

Urvashi Shobhna Kachari

Applicant

Versus

Union of India & Ors.

Respondent(s)

Date of hearing: 08.02.2023

**CORAM: HON'BLE MR. JUSTICE ADARSH KUMAR GOEL, CHAIRPERSON
HON'BLE MR. JUSTICE SUDHIR AGARWAL, JUDICIAL MEMBER
HON'BLE MR. JUSTICE ARUN KUMAR TYAGI, JUDICIAL MEMBER
HON'BLE DR. AFROZ AHMAD, EXPERT MEMBER**

Applicant: Mr. Raj Panjwani, Senior Advocate with Ms. Esha Dutta, Advocate

Respondents: Mr. Rahul Verma, AAG for the State of Uttarakhand
Mr. Thakur Sumit, Advocate for MoEF & CC
Mr. Mukesh Verma, Advocate for UKPCB

ORDER

1. Grievance in this application is against large scale unregulated violation of environmental norms along the pilgrim tracks of Kedarnath, Hemkund Sahib, Yamunotri and Gomukh pilgrimage centres in Uttarakhand. Such violations inter alia consist of indiscriminate disposal of plastic and animal waste, unregulated human waste, unregulated equine dung/waste/carcasses. More than 19 lakhs pilgrims visit such places about 20,000 equines are used in a season. There is no infrastructure to handle environmental issues arising out of such visits and related activities. There is breach of public trust doctrine by the State authorities in remedying the violations. Though regulation of number of

pilgrims and equines was proposed by the Uttarakhand Government vide orders dated 30.04.2022 and 10.05.2022, the same was not enforced. The applicant has mentioned following details of places and activities in this regard:

“A. District Rudraprayag (Kedarnath Dham)

*Total length of the track - 18 Kilometers
Starting point - Gaurikund Ghoda Padav
End Point - Rudrapoint Ghoda Padav
Number of equines used 12,000 to 14,000*

Nearest water body-River Mandakini (Tributary of River Alaknanda which in turn flows into the River Ganges).

B. District Chamoli (Hemkund Sahib)

*Total length of the track - 19 Kilometers
Starting point - Pulna
End Point - Hemkund Sahib (via Ghaghariya)
Number of equines used 2,000 to 3,000*

Nearest water body -River Alaknanda (Source Stream of River Ganges).

C. District Uttarkashi (Gangotri-Gomukh Dham)

*Total length of the track - 18 Kilometers
Starting point Gangotri Dham (Ghoda Padav - 700m from temple)
End Point -Gomukh
Number of equines used 200*

Nearest water body River Bhagirathi (Headstream of the River Ganges)

D. District Uttarkashi (Yamunotri Dham)

*Total length of the track - 5 Kilometers (18 kilometers from Hanuman Chatti)
Starting point - Janki Chatti Ghoda Padav
End Point - Yamunotri Dham Ghoda Padav
Number of equines used - 6,000 to 8,000*

Nearest water body - River Yamuna (Tributary of the River Ganges).”

2. Vide order dated 12.08.2022, the Tribunal sought a factual report in the matter from Regional Director, CPCB, Uttarakhand, nominee of MoEF&CC, Uttarakhand State PCB and nominee of G.B. Pant Institute of Himalayas.

3. Accordingly, the Committee has filed its report on 10.01.2023 after undertaking visit to the sites. The report fairly acknowledges that infrastructure for waste management is inadequate. Equine excrement, solid garbage, and plastic waste were observed on and around the tracks and in the valley. Soak pit toilets were overflowing with waste or the toilets were not working. Public toilets were insufficient for the number of visiting pilgrims. During peak hours, there was possibility of a very bad scenario regarding the management of solid/plastic garbage and track cleaning. 15,63,278 pilgrims visited in 2022. Govt. of Uttarakhand has restricted number of pilgrims to 13,000 per day. During interaction with local people, it was found that the number exceeded during May to July every year. Handling of the excrement and wastewater produced by equine and mules lacked scientific mechanism. Dung was either lying on tracks or swept to side of the tracks. Shelter and space available for horses and mules were insufficient. If any mules/equines die during tracking, the insurance provider takes 3-4 days to verify the factual status for reimbursement of losses. After being verified by the insurance provider, dead mules and horses are buried. When the number of pilgrims is higher, owners of mules and horses strive to make the most excursions in a single day, harming the mules and horses in the process. According to conclusion of the Committee, preliminary carrying capacity assessment of mules/equines on the track path has been done. Socio-ecological criteria based extensive study is required. A system for managing and regulating people in pilgrimage locations, especially during peak season, should be developed (April, May and June). Solid and plastic waste, and site-specific mechanisms for its collection and transportation should be devised. Agency needs to set up solid waste processing plants. Plastic waste should be collected and disposed of through registered recyclers. Agency should provide adequate space at

ghoda padav/shelter. Dung generated from shelter and back should be cleaned at regular interval and disposed of as per the Solid Waste Management Rule, 2016. Government or Agency should provide a team of veterinarians to every pilgrimage site to ensure adequate care of mules and horses and to prevent animal abuse. System should be established to make sure that the post-mortem and verification of insured deceased mules doesn't take too long, and that they are disposed of in accordance with CPCB guidelines. Relevant extracts from the report are:

“3.1 *Kedarnath Track, Uttarakhand*

Kedarnath temple is located in Rudraprayag district, on the Garhwal Himalayan range on the shores of Alaknanda river, a tributary of Ganga in the state of Uttarakhand, India at Elevation of approx. 3583 m above the sea level. According to Hindu legends, the temple was initially built by the Pandavas, and is one of the twelve Jyotirlingas, the holiest Hindu shrines of Shiva. The Pandavas were supposed to have pleased Shiva by doing penance in Kedarnath. The temple is open to the general public only between the months of May and October. During the winters, the vigraha (deity) of the temple is carried down to Ukhimath to be worshipped for the next six months. The temple is not directly accessible by road and has to be reached by a 18kilometres uphill trek from Gaurikund. Pony, mule, manchan service and Helicopter services are available to reach the temple and complete Kedarnath darshan. As informed by the Rudraprayag administration, the Temple opens for the pilgrims on 4.00 am to 4.00 pm

3.1.1 Solid Waste and Plastic Waste Management:

- i. Zila Panchayat, Rudraprayag (hereafter referred as "agency") is authorized agency for management of solid and plastic waste in entire track.*
- ii. M/s Shulabh International Pvt. Ltd. has been given the job of clearing up waste along the Gaurikund-Kedarnath Track by Zila Panchayat Rudhraprayag.*
- iii. According to reports, 80 sweepers were assigned to clear the track from Khankhra to Sonprayag. However, during investigation it was observed that the tracks had not been cleaned. The track was smeared in poop, solid trash, and plastic waste.*
- iv. No waste processing plant was built at Rudraprayag for management of solid and plastic waste generated from Kedarnath track. According to reports, solid and plastic waste are collected and dumped into Nagar Palika trenching area, which is against the Solid Waste*

Management Rules 2016 and Plastic Waste Management Rules, 2016 as amended.

- v. Very poor solid/plastic waste management was noticed during the inspection. The agency hasn't given adequate details about the methods for collecting, transporting, and disposing of solid and plastic waste.
- vi. The quantity of non-biodegradable waste collected by the agency from 2019 to 2022 (Table 2) is as below:

Table 2. Collection of non-biodegradable waste from the Kedarnath Track

Year	2019	2020	2021	2022
Quantity (in Kg)	700	200	300	900

- vii. During the visit, equine excrement, solid garbage, and plastic waste were observed on and around the track and in the valley.
- viii. It was also observed that some locations had soak pit toilets that were overflowing with waste, and others had non-working toilets.
- ix. It was remarked during the visit by the inspection team that the public toilets appeared insufficient for pilgrims.
- x. The agency also informed the team that more people visit between May and July each year than during other months. During peak hours, the possibility of a very bad scenario regarding the management of solid/plastic garbage and track cleaning cannot be ruled out.
- xi. It has also been observed that the number of pilgrims has exponentially increased since the Covid 19 pandemic.
- xii. It is evident from above graph that 15,63,278 pilgrims visited in 2022 as compared to 1,30,551 and 2,42,712 pilgrims in year 2020 and 2021 respectively.
- xiii. Govt. of Uttarakhand has restricted number of pilgrims to 13,000 per day. But, during interaction with local people, number exceeded during May to July of every year.

3.1.2 Equines/Mules and its waste management:

- i. Zila Panchayat, Rudraprayag (hereafter referred as "agency") is authorized agency for management of Equines/mules in the track. It is informed that tender is awarded to agency/contractor for management of Equines/mules based on bidding process.
- ii. During the visit, the handling of the excrement and wastewater produced by equine and mules lacked a mechanism. Dung was either laying on track or swept to side of the tracks.
- iii. The shelter and space available for horses and mules were likewise insufficient.
 - ii. According to data provided by the agency, the number of registered mules/equines deputed in the Kedarnath track is as follows:

Table 3. Number of registered mules in the Kedarnath Track

Year	2019	2020	2021	2022
Registered mules/equines	7636	372	1744	8761

- iv. The committee has received no information from Zila Pachayat, Rudraprayag, regarding the number of dead mules or horses, the number of insured mules, the status of postpartum care, or the status of the deputies serving as veterinary doctors in Kedarnath for mules or horses.
- v. During discussions with some mule owners, it was learned that during peak season, the number of mules and horses increased in comparison to the number of registered mules and horses.
- vi. It is informed that if any mules/equine die during tracking, the insurance provider takes 3-4 days to verify the factual status for reimbursement of losses. After being verified by the insurance provider, dead mules and horses are buried using deep burial methods.
- vii. Due to delay in the process of physical verification of dead mules/equines, the equine's body may begin to degrade, complicating disposal through deep burial.
- viii. The committee was informed during the visit that when the number of pilgrims was higher, the owners of mules and horses strove to make the most excursions possible in a single day, harming the mules and horses in the process.
- ix. During the visit, it was observed that there appeared to be more pilgrims than infrastructure for managing pilgrim traffic, solid garbage, plastic waste, and the manure of mules or horses.
- x. It is also informed that the number of the pilgrims increased during some special days on Hindu calendar.

3.2 Gangotri Track, Uttarakhand

Gangotri, one of the chardhams (the most sacred pilgrimage circuits in northern India with four holy destinations), is in Uttarkashi, a small town with the temple of Goddess Ganga at its heart. Gangotri is nestled among lofty Garhwal Himalayan peaks, glaciers, and dense forests and is one of the highest pilgrimages in India (approx. 3,415 m). Gangotri offers stunning vistas all around. According to Hindu legends, the most sacred of all rivers, the Ganges (or Ganga), descended from heaven to earth at Gangotri when Lord Shiva released the mighty river from his locks. The actual origin of the river is at Gaumukh in the Gangotri glacier, 18 km away from Gangotri and accessible by trekking. After it originates in Gaumukh, the river is known as Bhagirathi, and it acquires the name "Ganga" after the river Alaknanda merges into it near the town of Devaprayag. Every year on Diwali, the temple closes and reopens on Akshaya Tritiya. In winter, the idol of the goddess is kept at Mukhba village, near Harsil.

3.2.1 Solid Waste and Plastic Waste Management:

- i. Zila Panchayat Uttarkashi (hereafter referred as "agency") is authorized agency for management of solid and plastic waste in entire track.
- ii. It is reported that only three (03) sweepers were deputed to clean the track from Gangotri to Gomukh. However, during the inspection, it was Observed that the tracks had not been cleaned. The track was littered with dung, solid waste, and plastic waste.

- iii. There is no waste processing plant at Gangotri to manage the solid and plastic waste generated from Gomukh. The waste is being collected and disposed off in Nagar Palika trenching ground Barkot. This is in violation of the provisions of the Solid Waste Management Rules 2016 and the Plastic Waste Management Rules, 2016 as amended.
- iv. During the visit, very poor management of solid and plastic waste was observed. The agency has not provided a proper collection, transportation, and disposal system for solid and plastic waste.
- v. The quantity of non-biodegradable waste collected from Gangotri and Yamunotri by the agency during 2019 to 2022 is as below: -

Table 4. Amount of non-biodegradable waste collected from Gangotri and Yamunotri

Year	2019	2020	2021	2022
Quantity(in qq)	70	Nil	Nil	100

- vi. During the visit, plastic waste, solid waste and equines dung were found near the track and nearby track valley.
- vii. The graph indicating number of registered people visit during Gangotri yatra from 2019 to 2022 is depicted in fig 6.
- viii. It is evident from above graph that 4,85,688 pilgrims visited in 2022 as compared to 9,96,796 pilgrims in year 2019.
- ix. It is also informed that during May to July of every year, crowd escalates higher number as compared to other months. Possibility of very poor situation with respect of solid/plastic waste management as well as track cleaning cannot be ruled out during peak time.
- x. Govt. of Uttarakhand has restricted number of pilgrims to 8000 per day. But, during interaction with local people, number exceeded during May to July of every year.

3.2.2 Equines/Mules and its waste management:

- xi. Zila Panchayat, Uttarkashi (hereafter referred as "agency") is authorized agency for management of Equines/mules in the track. It is informed that tender is awarded to agency/contractor for management of Equines/mules based on bidding process.
- xii. During the visit, the handling of the excrement and wastewater produced by equine and mules lacked a mechanism. Dung was either laying on track or swept to side of the tracks.
- xiii. The shelter and space available for horses and mules were likewise insufficient.
- xiv. Number of registered mules/equines deputed in Gangotri to Gomukh track as per information provided by the agency is presented in Table 5.

Table 5. Number of registered mules/equines deputed in Gangotri to Gomukh track

Year	2019	2020	2021	2022
Registered mules/equanies	15	0	0	15

- xv. The committee has not received information from Zila Pachayat, Uttarkashi, regarding the status of postpartum procedures performed and the status of deputising veterinary doctors on track for Mules and horses.

- xvi. During interaction with some of owner of mules, it is informed that during peak season mules/equines were also increased as against registered mules/equines.
- xvii. It is informed that if any mules/equine died during tracking, insurance provider takes time to verify the factual status for reimbursement of losses. Dead body of mules/equines is disposed off by deep burial methods after verification by insurance provider.
- xviii. Due to delay in the process of physical verification of dead mules/equines, the equine's body may begin to degrade, complicating disposal through deep burial.
- xix. The committee was informed during the visit that when the number of pilgrims was higher, the owners of mules and horses strove to make the most excursions possible in a single day, harming the mules and horses in the process.
- xx. During the visit, it was observed that there appeared to be more pilgrims than infrastructure for managing pilgrim traffic, solid garbage, plastic waste, and the manure of mules or horses.
- xxi. During visit, it was observed that on some special days on Hindu calendar the number of the pilgrims increased drastically.

3.3 Yamunotri Track, Uttarakhand

Yamunotri, also known as Jamnotri, is the source of the Yamuna River and the seat of the goddess Yamuna in Hinduism. It is located in the Garhwal Himalayas district of Uttarkashi. The Yamunotri Temple is dedicated to the Yamuna, the second-most sacred river after the Ganges. A dip in the River Yamuna is said to protect one from untimely death. Devotees either walk or ride a palanquin or a pony to reach the temple (around 3,233 m above sea level) from Janki Chatti, a steep trek of about 14 km that takes about 3 to 4 hours. The temple of Yamuna closes its portals as winter approaches on Yama Dwitiya (the second day after Diwali or on Bhai Dooj) and then reopens again. On Akshaya Tritiya (occurring in April/May), Devi's winter address is Kharsali village, where she reaches in a palanquin and will remain for the entire period of winter.

3.3.1 Solid Waste and Plastic Waste Management

- i. Zila Panchayat Uttarkashi (hereafter referred as "agency") is authorized agency for management of solid and plastic waste in entire track.
- ii. The Yamunotri track was allegedly cleaned by sixty (60) sweepers. However, during the inspection, it was observed that the tracks had not been cleaned. Dungs, solid waste, and plastic waste were either on or in a track valley leading to the Yamunotri River.
- iii. Janki Chatti has no waste processing plant for the treatment of solid and plastic waste generated by track. According to reports, solid waste and plastic waste are collected and disposed off in Nagar Palika trenching grounds, in violation of the provisions of the Solid Waste Management Rules, 2016 and the Plastic Waste Management Rules, 2016 as modified.
- iv. The agency has installed compactor for plastic waste, but it wasn't operational.
- v. During visit, very poor management of solid/plastic waste was observed. Agency has not provided proper collection, transportation and disposal system for solid and plastic waste.
- vi. The quantity of non-biodegradable waste collected (Gangotri and Yamunotri) by the agency from 2019 to 2022 is presented in Table 6.

Table 6. Amount of non-biodegradable waste collected (Gangotri and Yamunotri)

Year	2019	2020	2021	2022
Quantity(in Kg)	70	Nil	Nil	100

- vii. During the inspection, plastic waste, solid waste, and horse dung were observed close to the track and in the valley next to the track.
- viii. During the visit, the soak pit toilet system that was installed in some locations was found to be full of waste and some toilets were found to be dysfunctional.
- ix. It was observed during the visit that the public toilets appeared insufficient for pilgrims.
- x. It is also informed that during May to July of every year, crowd escalates higher number as compared to other months. Possibility of very poor situation with respect of solid/plastic waste management as well as track cleaning cannot be ruled out during peak time.
- xi. The graph indicating number of registered people visit during Yamunotri and Gangotri yatra from 2019 to 2022 is depicted below in fig 8.
- xii. It is evident from above graph that 4,85,688 pilgrims visited in 2022 as compared to 9,96,796 pilgrims in year 2019.
- xiii. During visit, there was no solid waste/ equine dung collection pit and plastic waste management system was developed in Yamunotri Track.
- xiv. Govt. of Uttarakhand has restricted number of pilgrims to 5000 per day. But, during interaction with local people, number exceeded during May to July of every year.

3.3.2 Equines/Mules and its waste management:

- xv. Zila Panchayat, Uttarkashi (hereafter referred as "agency") is authorized agency for management of Equines/mules in the track. It is informed that tender is awarded to agency/contractor for management of Equines/mules based on bidding process.
- xvi. Number of registered mules/equines deputed in Janki Chatti to Yamunotri track, number of dead mules/ equines and insured mules/ equines as per information provided by the agency is presented in Table 7.

Table 7. Number of registered mules/equines deputed in Janki Chatti to Yamunotri track

Year	2019	2020	2021	2022
Registered mules/equines	1500	0	0	2900
Insured mules/equines	50	0	0	1200
Dead mules/equines	68	0	0	35

- xvii. The shelter and space that were offered to horses and mules were likewise insufficient.
- xviii. During the visit, it was observed by the committee that there was no developed mechanism for managing the excrement and wastewater produced by equine and mules. Dung was swept to the side of tracks.
- xix. Zila Pachayat, Uttarkashi has not provided information to the committee regarding the status of postpartum procedures and the situation of the appointment of veterinary doctors to the Gomukh and Yamunotri track for Mules and Equines.
- xx. Interaction with mule owners revealed that during peak season, the number of mules and horses was also higher than the number of registered mules and horses.

- xxi. *If any mules or horses die during tracking, the insurance provider takes time to verify the factual status for reimbursement of losses. After being verified by the insurance provider, dead mules and horses are buried using deep burial methods.*
- xxii. *Due to delay in the process of physical verification of dead mules/equines, the equine's body may begin to degrade, complicating disposal through deep burial.*
- xxiii. *The committee was informed during the visit that when the number of pilgrims was higher, the owners of mules and horses strove to make the most excursions possible in a single day, harming the mules and horses in the process.*
- xxiv. *During the visit, it was observed that there appeared to be more pilgrims than infrastructure for managing pilgrim traffic, solid garbage, plastic waste, and the manure of mules or horses.*
- xxv. *It is also informed that the number of the pilgrims increased during some special days on Hindu calendar.*

3.4 Hemkund Sahib Track, Uttarakhand

Hemkund Sahib (also spelled Hemkunt), formally known as Gurudwara Shri Hemkund Sahib Ji, is a Sikh place of worship and pilgrimage site in Chamoli district, Uttarakhand, India. This beautiful gurudwara is situated at an altitude of around 4,329 m, on the bank of the pristine Hemkund Lake. Surrounded by snow-capped peaks, the gurudwara's picturesque natural settings and trek routes, including the one to the Valley of Flowers, make it a popular destination for trekkers and tourists. Himganga, a small stream, originates from the lake. It is said Lakshmana, the younger brother of Lord Rama from the epic Ramayana, regained his health by meditating on the banks of Hemkund after the severe injuries he received in the war. The Lakshmana temple is said to have been built at the place where Lakshmana meditated. Among the essential seven day stretch of June and the principal seven day stretch of October, is the Hemkund Sahib Yatra Uttarakhand broadly wide-spread. Because of snow, it's inapproachable from October to April. In can likewise, Sikh pioneers show up to re-establish the course, called "Kar Seva." Hemkund Sahib is the world's loftiest Gurudwara.

Despite being validated in Guru Gobind Singh's biography, Shri Hemkund Sahib stayed resigned for right around two centuries.

It is the world's The Valley of vegetation is without a doubt near Hemkund

Sahib, which is an UNESCO worldwide chronicled past site on the web. It is recognized for its elevated bloom covered glades and particular foliage. In like manner, it's the world's handiest Gurudwara that stick at any such high pinnacle.

About 3 kilometres (1.9 mi) from Gobinddham is the 5-kilometre (3.1 mi) long Valley of Flowers. The Indian Government has declared this valley a national park. It is situated in Nanda Devi Bio Reserve, and all activities are carefully regulated to preserve the valley in pristine condition.

Total length of Govinddham to Hemkundsahab is approx. 19 kilometres. Helicopter service is also available between Govinddham to the village of Ghangaria. This track can also be covered either by walk or by mules/equines.

3.4.1 Solid Waste and Plastic Waste Management:

- i. *The Chamoli Zila Panchayat is the authorised agency for the management of solid and plastic waste throughout the track.*

- It has formed an Eco Development Committee, Bhyunder is in charge of waste cleaning and management.*
- ii. It is reported that forty-six (46) sweepers were deputed to clean the tracks of Hemkund Sahib. However, during the inspection, it was observed that the tracks had not been cleaned. The track was littered with dung and solid waste.*
 - iii. There were no waste processing plant was established for the management of solid and plastic waste generated from track. It is reported that solid waste is collected and disposed of at the Pulna dumping ground, contrary to the provisions of the Solid Waste Management Rules, 2016*
 - iv. Plastic garbage reportedly gets delivered to Nijamabad vendors for recycling..*
 - v. Poor solid and plastic waste management was seen throughout the inspection. Solid and plastic garbage are not properly collected, transported, or disposed of by the agency.*
 - vi. The quantity of non-biodegradable waste collected by the agency from 2019 to 2022 is presented in table 8.*

Table 8. quantity of non-biodegradable waste collected by EDC, Bhyundar rom Hemkund Sahib trek and Valley of flower

Year	2019	2020	2021	2022
Quantity	51 ton	Nil	Nil	55 on

- xxvi. During the inspection, plastic waste, solid waste, and horse dung were observed close to the track and in the valley next to the track.*
- xxvii. It was also observed during the visit that the public toilets appeared insufficient for pilgrims.*
- vii. It is also informed that during May to July of every year, crowd escalates higher number as compared to other months. Possibility of very poor situation with respect of solid/plastic waste management as well as track cleaning cannot be ruled out during peak time.*
- viii. It is also observed that there is increase in number of pilgrims after Covid 19 pandemic. The graph indicating number of registered people visit during Hemkund Sahib from 2019 to 2022 is depicted in fig 11.*
- ix. It is evident from above graph that 2,55,000 pilgrims visited in 2022 as compared to 11,000and 2,40,000 pilgrims in year 2021and 2019 respectively.*
- x. It is also informed that during May to July of every year, crowd escalates higher number as compared to other months. Possibility of very poor situation with respect of solid/plastic waste management as well as track cleaning cannot be ruled out during peak time.*

3.4.2 Equines/ Mules and its waste management:

- xi. Zila Panchayat, Chamoli (hereafter referred as "agency") is authorized agency for management of Equines/mules in the track.*
- xii. It is informed that tender is awarded to agency/contractor for management of Equines/mules based on bidding*
- xiii. During visit, there was no system for management of dung and effluent generated from equine, mules developed. Dung was sweep to side of the tracks.*
- xiv. Shelter/space provided for equines/mules was also inadequate*
- xv. Number of registered mules/equines deputed, dead mules/equines and percentage of insured mules/equines as*

per information provided by the agency is presented in table 9.

Table 9. Number of registered mules/equines deputed in Hemkund sahib track

Year	2019	2020	2021	2022
Registered mules/equines	1100	0	500	1200
No. of dead mules/equines	30	Nil	15	24
Percent of insured mules/equines	30%	Nil	Nil	60%

- xvi. The agency has not provided the committee with information on the status of postpartum procedures performed or the status of deputising veterinary doctors for Mules and equines.
- xvii. It has been reported that dead mules/equines are buried deeply.
- xviii. During the visit, it was observed that the number of pilgrims seemed higher in terms of the installed and available infrastructure to manage the pilgrim's traffic, solid waste, plastic waste, and mule's dung.
- xix. During visit, it was informed by the committee that when number of pilgrims was high, the owners of mules/ equine try to get maximum trips in single days, due to those mules get suffers.
- xx. It is also informed that the number of the pilgrims increased during some special occasion.

4. Gaps and required action

The committee has identified following gaps and the action plan required for maintaining the proper solid waste management is presented in Table 11.

Table 10, Gaps and required plan of action in the study area

S. No.	Gaps	Plan for Action
1	Equine entry in the trek routes is not regulated. A large number of animals can cause ecological disturbance of the pristine areas.	A socio-ecological criteria-based carrying capacity should be assessed and the number of equines should be restricted as per the study. These involves extensive research which may be done through a Govt. institution.
2	Proper management and monitoring practices about the equine health and facilities are not available in the areas	For equine stalls, the Indian Standard CODE OF PRACTICE FOR EQUINE HOUSING 1964 should be followed.
3	Solid waste management facility is not properly available in the areas (except Gangotri-Gaumukh trek route)	Management practices like source segregation of waste, establishment small and large bio composting pits should be implemented in the area. Disposal of all solid waste should Shredder and compactor are needed for the reducing the bulk volume of the plastic waste. Disposal of plastic waste should be carried out in accordance with the Plastic Waste Management

		<i>Rules, 2016 as amended.</i>
4	<i>Data on water and soil quality is not available.</i>	<i>Soil and water quality should be monitored in regular manner for the adjacent rivers e.g., Bhagirathi, Yamunotri, Saraswati and Mandakini. All the basic parameters (physical, chemical and biological) should be monitored regularly so that the impact of tourism and equines on soil and water quality can be assessed.</i>
5	<i>There has been no report or research done so far on the direct effect of tourist in flow on biodiversity loss in the concerned areas.</i>	<i>A detailed scientific study is needed to be carried out in all the four-pilgrimage area for the assessment of floral and faunal diversity around dumping sites, with long term monitoring of the impact of tourist inflow on biodiversity.</i>
6	<i>Lack of awareness among tourists and the local community about the impact of tourism on the environment.</i>	<i>As tourism has shown a drastic increase in the last few years, sustainable tourist activities should be practiced by both local communities as well as by the tourists.</i>

5. Concluding Remarks and Recommendations:

It is evident from the above observation that solid and plastic waste management is very poor in the pilgrim tracks, viz. Kedarnath, Yamunotri, and Hemkund Saheb. However, Gangotri-Gomukh trek has moderate level of management for solid waste which need to be strengthened. On the track, there was solid and plastic waste as well as mules/equines dung. No proper collection, transportation and disposal system for solid waste, plastic waste and dung was observed. Waste is swept to the side of the track by sweepers working to clean the tracks. The shelter/ghodapadav was found to be in extremely poor condition. In comparison to registered mules/equines, there are fewer and smaller shelters. All four pilgrim tracks have a dung heap at the shelter place. Disposal mechanism of dead body of mules/equines is not defined. Hence, Zila Panchayat, Chamoli, Rudraprayag and Uttarkashi may be directed to comply with following recommendations:

- a. An initial level carrying capacity assessment of mules/equines on the track path is being done by GBPNIHE using preliminary data provided by the district authorities/agencies (**Annexure-2**). However, a socio-ecological criteria based extensive study is required for the carrying capacity assessment of all the pilgrim tracks through reputed govt. Institute and accordingly allow pilgrims to visit. A system for*

managing and regulating people in pilgrimage locations, especially during peak season, should be developed (April, May and June).

- b. The agency shall collect all solid and plastic waste, and site-specific mechanisms for its collection and transportation should be devised.*
- c. The agency needs to setup a solid waste processing plant. All solid waste should be properly treated/disposed off as per the Solid Waste Management Rule, 2016.*
- d. Plastic waste should be collected and disposed off through registered recyclers.*
- e. The agency should provide adequate space at ghodapadav/shelter. Dung generated from shelter and track should be cleaned at regular interval and disposed off as per the Solid Waste Management Rule, 2016. Dung at track should be cleaned at regular interval and immediately send to treatment area*
- f. Agency should ensure proper treatment of liquid waste generated from mules/equines.*
- g. The State Government or Agency should provide a team of veterinarians to every pilgrimage site to ensure adequate care of mules and horses and to prevent animal abuse.*
- h. A system should be established to make sure that the post-mortem and verification of insured deceased mules doesn't take too long, and that they are disposed of in accordance with CPCB guidelines.*
- i. Regular surveillance is required to ensure compliance with the above recommendations as well as proper enforcement of the Solid Waste Management Rules, 2016 and the Plastic Waste Management Rules, 2016, as amended."*

4. The carrying capacity study report referred to above has been annexed which inter-alia is as follows:

"Management plan at Chardham

1. Equine physical carrying capacity

*As per IS 2734 (1964), the floor area to be provided for each average-size animal should be 3.5*3.0 m. In the concerned trek routes usually, equines are used in pairs in the trek routes (Code of Practice for Equine Housing, FAD 5: Livestock Feeds, Equipment, and Systems). Therefore, presently we have considered a 16 m length is required for each pair (equine 1st (3.5m) + gap (2m) + equine 2' (3.5m) +gap for another group (7m)). Following the above, the carrying capacity of the equines is mentioned in the table 11.*

Table 11. Carrying capacity of equines in the trek route

Name of the trek	Length of track (in Km)	Carrying capacity of equine units (1 pair of equines, Q)	Total number of equines may be allowed (TN = Q*2)
Kedarnath	18	1125	2250
Hemkund sahib	19	1187.5	2375
Gangotri	18	1125	2250
Yamunotri	7	437.5	875

2. Equine housing and feeding

Further, for equine stalls, the Indian Standard CODE OF PRACTICE FOR EQUINE HOUSING 1964 should be followed.

If considering feed of the equines, at Govindghat and Kedarnath area, the mules mostly feed on hay, brought from Ramnagar and Haldwani's markets. Besides giving hay and gram (channa) to the mules, they also purchase grass from the local villagers. The practice of grass selling began in the Bhyundar valley. Approximately, a mule eats on an average 8-10 kg grass per day that costs around Rs 100 and the total cost of maintenance of a mule is more than Rs 100 per day which also includes gram (channa) which is an essential dietary requirement. Sometime due to a smaller number of tourists it becomes hard for mule owners to bear this expenditure on mules. The local mule owners of nearby valleys go back home and come again once they are sure that the tourists are coming in sufficient numbers. Whereas, the mule owners from larger distances such as (Najibabad, Bijnor, Ramnagar etc) have no option but to stay back till the Gurudwara at Hemkund was closed for winter. They, purchase grasses from Ghangria market, which had set an example of community management and sharing of resources by the community itself. The successful management of grass economy by the Bhyundar people despite the fact that the grasslands in Bhyundar valley are disputed and Forest Dept. is also one of the stakeholders highlights the concept of collective decision making and full participation of the villagers under the concepts of social equity and incorporation of indigenous management systems. Thus, the traditional systems of utilization of natural resources and the concept of community participation in decision making functions well (Kala & Farooquee, 2017). Such practices may be promoted in the concerned trek areas so that the mule owners could get their equine feed from local resources.

3. Solid waste management

The following actions are suggested for management of solid waste in the area:

1. Source segregation of waste should be done and for that least two eco-friendly waste bins (biodegradable +nonbiodegradable) are required in every 100 m distance of the trek routes.

2. *Collected waste should be managed weekly in every trek route.*
3. *Establishment of small and large microbial bio-composting pits (1 m x 1 m x 1 m - 3 m x 1 m x 1 m) for management of biodegradable waste (Kuniyal, 2005a, 2005b) is recommended in every 5 km distance.*
4. *For mule dung, drainage system may be built throughout the trek routes and collected dung may be converted to bio gas. For this purpose, Further, mule dung based biogas production units may be promoted in the areas. (Chauhan & Saini, 2015).*
5. *For non bio-degradable waste, could be brought back to the starting point of each trek route. One shredder and waste compactor each is needed for every pilgrim place.”*

5. The report shows serious failure on the part of Administration in the State in breach of its Constitutional responsibility for which accountability needs to be fixed and the situation remedied on war footing for protection of environment in fragile eco-system of Himalayas and upholding the principle of sustainable development. This needs to be taken up on priority at highest level in the Administration in coordination with all concerned. Such important and sensitive responsibility should not be left with Zila Panchayats without serious involvement of District Administration and the State at higher levels.

6. Accordingly, we allow this application and direct the State to forthwith take effective remedial measures in the matter. A joint Committee of Chief Secretary, Uttarakhand, Additional Chief Secretary, Environment and Forest, Uttarakhand, DGP, Uttarakhand, Director, G.B. Pant National Institute of Himalayan Environment & Sustainable Development, Director, Wildlife Institute of India, Dehradun, District Magistrates, Rudraprayag and Uttarkashi, Chairmen, Zila Panchayats, Rudraprayag and Uttarkashi Districts may meet within 15 days from today to take stock of the situation and prepare road map. The Committee will be free to meet online/offline, to undertake site visits and interact with stakeholders. The action plan may inter alia include limiting

number of vehicles, type of vehicles, number of tourists, number of mules, consistent with the carrying capacity of eco-sensitive area. It may review and plan infrastructure for waste management, disposal of dead mules and other measures for protection of flora and fauna, safety precautions, installing locations for CCTV cameras, monitoring mechanism, control room, developing an appropriate mobile App, preparing SOP and display boards of do's and don'ts, demarcation of areas where activities incompatible with environment are prohibited/regulated, sources of funds to sustain regulatory measures, traffic management at suitable locations, compliance of environment norms including Water Act, Air Act and EP Act, imparting awareness and education on environmental issues to the tourists, inhabitants and operators. The action plan may also include discouraging use of food and products packed in non-biodegradable packaging material, encouraging depositing waste at designated places, involving citizens – the youth, house-wives and senior citizens in guiding tourists in maintaining cleanliness and hygiene. The taxi drivers and bus drivers may also be involved in creating awareness among the tourists. The execution of action plan may be duly monitored in the light of experience gained, the plan may be revised periodically every seasons or as per need. Waste processing/management facilities for bio-degradable and non-biodegradable waste may be set up at appropriate locations which may be set up on contract basis or otherwise, using best practices on the subject. Requisite funds be allocated at district and gram panchayat level for execution of action plan which may be monitored at District Magistrate level and finally supervised by the Chief Secretary.

7. An action taken report in the matter may be filed with the Registrar General of this Tribunal within two months by e-mail at judicial-

ngt@gov.in preferably in the form of searchable PDF/OCR Support PDF and not in the form of Image PDF. If found necessary, the same may be placed before the Bench for further directions.

Subject to above, the application is disposed of.

A copy of this order be forwarded to Chief Secretary, Uttarakhand, Additional Chief Secretary, Environment and Forest, Uttarakhand, DGP, Uttarakhand, Director, G.B. Pant National Institute of Himalayan Environment & Sustainable Development, Director, Wildlife Institute of India, Dehradun, District Magistrates, Rudraprayag and Uttarkashi, Chairmen, Zila Panchayats, Rudraprayag and Uttarkashi Districts by e-mail for compliance.

Adarsh Kumar Goel, CP

Sudhir Agarwal, JM

Arun Kumar Tyagi, JM

Dr. Afroz Ahmad, EM

February 08, 2023
Original Application No. 561/2022
DV