IN THE NATIONAL GREEN TRIBUNAL
(SOUTHERN ZONE), CHENNAI

ORIGINAL APPLICATION NO.77 OF 2020

IN THE MATTER OF:

Tribunal on its own motion Suo Motu based on the News Item in The New Indian Express Newspaper Dated 03.06.2020, "Kerala elephant tragedy: Another Jumbo suspected to have been killed in similar fashion"

.....APPLICANT

VERSUS

Ministry of Environment, Forest & Climate Change

and others

.....RESPONDENTs

REPLY AFFIDAVIT ON BEHALF OF THE MINISTRY OF ENVIRONEMNT, FOREST AND CLIMATE CHANGE (Respondent No.1)

Me. Sarashwathy
9/07/2020

ME.SARASHWATHY

Counsel for the Respondent No.1

IN THE NATIONAL GREEN TRIBUNAL

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I, Dr. K. Muthamizh Selvan S/o Shri M. Kangaraj, aged about 36 years, presently working as Scientist "D" in the Ministry of Environment, Forest & Climate Change (MoEF&CC) do hereby solemnly affirm and sincerely state as follows:-

1. That I am acquainted with the facts and circumstances of the instant case and duly competent to swear the present affidavit on behalf of the MoEF&CC on the basis of the official records maintained therein.

2. It is submitted that the Hon'ble Tribunal vide its order dated 5th June 2020in the matter of: The New Indian Express Newspaper Dt. 03.06.2020, "Kerala elephant tragedy: Another Jumbo suspected to have been killed in similar fashion" Proceedings have been initiated by the Hon'ble Tribunal in this matter on the basis of news item in the New Indian Express dated 03.06.2020 under the caption "Kerala elephant tragedy: Another Jumbo suspected to have been killed in similar fashion"

3. According to the news item, a pregnant wild elephant in Silent Valley Forest had fallen victim to an act of human act of using explosive substance kept in a Pineapple which was consumed inadvertently by the wild elephant and which resulted in the death of the pregnant wild elephant and the fetus was also damaged on account of the same and the young one died without seeing the light of the day.

4. That on 3rd June 2020, The Ministry of Environment, Forest & Climate Change send a letter to PCCF & CWLW, Kerala regarding the incident and requested them to take urgent action under Wildlife (Protection) Act, 1972 and also sought for the action taken report in the matter. The True copy of the letter issued by the answering Respondent is annexed as **ANNEXURE-1.**

5. That on 4th June 2020, the Kerala Forest Department submitted preliminary report on death of female elephant on 27.05.2020 at Ambalappara, Theyyamkundu area in Kerala. The True copy of the Preliminary report submitted by the Kerala Government is annexed as **ANNEXURE-2.**

6. That this Ministry further requested Wildlife Crime Control Bureau (WCCB) on 4th June 2020 to take immediate action in consultation with State Forest Department of Kerala for nabbing the criminals involved in the case. The report from WCCB was received on 08.06.2020 which is annexed as **ANNEXURE-3.**

7. That vide order dated 05.06.2020, The Hon'ble NGT(SZ), Bench has directed to appoint a Joint committee comprising of a senior officer not below the rank of Chief Conservator of Forest, deputed by the Principal Chief Conservator of Forest, Wildlife, Chief Wild Life Warden, Kerala; a senior officer from Wildlife Crime Control Bureau , Southern Zone, Wild Life Warden of silent valley Division and Divisional Forest Officer of Mannarkkad and Punalur and the District collector, Palakkad and to submit a factual and action taken report including the long term management plan to avoid such recurrences in future.

8. That on 7th June, 2020, The MoEF&CC again requested the Kerala Forest Department to give a detailed report on the progress being made in the legal action against the offenders in the instant case. The True copy of the letter issued by the answering Respondent is annexed as **ANNEXURE-4.**

9. That on 10th June, 2020, the Kerala Forest Department sent a detailed report regarding the death of the female wild elephant due to explosive consumed by the elephant in Palakkad District, Kerala State. The True copy of the detailed report issued by the Kerala Forest Department is annexed as **ANNEXURE-5.**

10. That on 10th June, 2020 The Ministry of Environment, Forest & Climate Change sent letter to all the PCCFs of all the elephant range states and requested to take all necessary preventive measures to prevent Human elephant conflict in the country in reference to the issue happened in Kerala. The True copy of the letter issued by the answering Respondent is annexed as **ANNEXURE-6.**

11. That it is further submitted that the Ministry of Environment, Forest and Climate Change remains deeply committed to protecting the country's natural environs and diverse wildlife, and taking all humane steps to minimize human – animal conflict. In this regard, it is respectfully submitted that the MoEF&CC had taken various steps on the recommendations of the Elephant Task Force

(2010) report, 'Gajah', to mitigate human-animal conflict as a result of which, both human and elephant deaths have decreased noticeably in the recent years.

12. That it is respectfully submitted that while the responsibility for the management of forests and wildlife vests with the concerned state governments, the MoEF&CC is fully committed to advise and facilitating the state governments' endeavours to effectively manage the country's forests and wildlife.

13. The Steering Committee of Project Elephant recommended the constitution of Working Groups for Study feasibility and implementation of the Recommendations of the Elephant Task Force Report, 'Gajah'. As per the working group recommendation the Ministry had formulated 'Guidelines of human-elephant conflicts', which have been issued to states on 6.10.2017. All states have been directed to adopt the recommendations of 'Gajah'. A True copy of the said guidelines issued by the answering respondent is annexed as **ANNEXURE 7.**

14. That all financial and technical support is being provided to major elephant bearing states in the country by the MoEF&CC. Under the Project Elephant Scheme, Rs.574.56 Lakhs in current financial year is provided to the State of Kerala for undertaking various activities for scientific management of elephant habitats as well as for mitigation of Human Elephant Conflicts in the Country.

15. That the First Regional Workshop on "Right of Passage to elephants" to mitigate Human-Elephant conflict for Southern region was held at Thiruvananthapuram on 11th -12th January 2018. Sensitizing local communities living in elephant landscapes to learn to co-exist is another important matter to look after and leave the elephants alone. The True copy of the proceedings of the First Regional Workshop on "Right of Passage to Elephants" to mitigate human elephant conflict for Southern Region is annexed hereto and marked as **ANNEXURE-8.**

16. It is submitted that the present reply may kindly be taken on record and into consideration and the Hon'ble Tribunal may pass appropriate Orders(s)/Direction(s) as deemed fit and proper under the facts and circumstances of the present case which the answering Respondent shall duly comply with.

DEPONENT

VERIFICATION

Verified at New Delhi on this day 8th July, 2020 that the contents of the affidavit are true and correct to my knowledge and belief based on official records maintained in the routine course of business. No part of the above affidavit is false and nothing material has been concealed there from.

DEPONENT

IN THE NATIONAL GREEN TRIBUNAL (SZ), CHENNAI

O.A. NO.77 OF 2020

Tribunal on its own motion Suo Motu based on the News Item in The New Indian Express Newspaper Dated 03.06.2020, "Kerala elephant tragedy: Another Jumbo suspected to have been killed in similar fashion"

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Dated at Chennai the 9th day of July, 2020.

Me. Saraswathy 9/07/2020

ME.SARASHWATHY

Counsel for the Respondent No.1

F. No. 2-23/2017 – PE
Government of India
Ministry of Environment, Forests & Climate Change
Project Elephant Division

Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi-110003

Dated 3rd June, 2020

To

The Principal Chief Conservator of Forests (WL)
& Chief Wildlife Warden,
Government of Kerala,
Forest Head Quarters,
Vanalakshmi,
Thiruvananthapuram.

Sub: Pregnant wild elephant dies after cracker filled pineapple explodes in her mouth – reg.

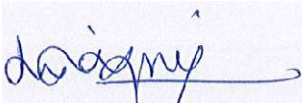
Sir,

Please find enclosed a copy of the note published in the Times of India dated 2nd June, 2020, also in various news in print and visual media it is learnt that one female pregnant elephant had died after a cracker filled pineapple explodes in her mouth.

It is requested to look into the matter and take urgent action under Wildlife (Protection) Act, 1972, related States rules. Stringent legal action may also be taken against the persons found to have violated Wildlife (Protection) Act, 1972 and other Acts and rules in this regard. A report on the action taken by the State Forest Department may kindly be forwarded to this Ministry at the earliest by email projectelephant.moef@gmail.com.

Yours faithfully,

Encls: As above.



(Dr. K. Muthamizh Selvan)
Scientist 'D' (Project Elephant)
Email id: km.selvan@gov.in
Telephone No. 011-24695067

SURENDRA KUMAR, IFS
PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) &
CHIEF WILDLIFE WARDEN
KERALA.

FOREST HEADQUARTERS,
"VANALAKSHMI"
Vazhuthacaud
Thiruvananthapuram-695 014.
☎ (Off): 0471 – 2321610
Fax: 0471 – 2320554
Mobile: 9447979009
E.mail:cww.for@kerala.gov.in

No.WL 8-145008/2020 **Dated 04.06.2020**

To

The Director
Project Elephant

Inspector General of Forests (Wildlife)
MoEF & CC

Sir,

Sub : **Kerala Forest Department-Death of female elephant on 27.05.2020 at Ambalappara Theyyamkundu area –Report submitted -Reg**

Ref :

Attention is invited to the subject cited above. The brief background of the case is as follows:

One injured female elephant was spotted by Forest officers on 23.05.2020 at a place called Ambalappara, falling under Mannarkkad Forest Division, Palakkad District. The elephant was having injury in the mouth. After this, elephant went to the forests and again reappeared on 25.05.2020 at a place called Theyyamkundu nearly 1.00 km away from forest area. It was standing in river water. Forest officers tried to drive the elephant back to the forests but it was reluctant and eventually refused to go. On the same day, Assistant Forest Veterinary Officer from Thrissur inspected the elephant and suggested that giving medical treatment after

tranquilization is not an option seeing the health condition of the elephant. Hence it was decided to bring 2 kumki elephants from Palakkad for pulling elephants from the river and for providing treatment. All arrangements were made and kumki elephants were brought to the spot but the injured elephant succumbed to injuries before anything could be done to it on 27.05.2020. Subsequently on 28.05.2020, postmortem was conducted and it was revealed that the elephant was pregnant for 2 months. An OR.No.10/2020 has been registered against unknown accused in Thiruvizhamkunnu Forest Station.

A lot of misinformation is circulating in the social media regarding which following clarification is made:

4. There is no evidence that someone has fed the elephant with pineapple stuffed with crackers.
5. The injury in the mouth may be due to the explosive but how and when and where the exact accident took place is yet to be known and investigated.
6. The incident took place in Palakkad District and not in Malappuram District.

Action taken so far:

1. OR No.10/2020 has been booked in Thiruvizhamkunnu Forest Station in Mannarkkad Forest Division for poaching.
5. A joint team for investigation of the case has been formed comprising of Wildlife Warden, Silent Valley National Park, Divisional Forest Officer, Mannarkkad, Range Forest Officer,

Mannarkkad, Assistant Wildlife Warden, Silent Valley National Park and 5 more staff.

6. Verification of forest fringes from Ambalappara to Uppukulam (about 10 km) has been completed for collecting evidence of any possible news of explosives and snares.
7. Local inquiry has been made about identity of persons who use explosives in their areas.

Proposed actions:

6. A meeting of Jana Jagratha Samithi is being convened on 04.06.2020, in the locality to spread awareness and collect evidence.
7. On getting evidence on the use of explosives, assistance of Police will be sought for, to proceed further in the case.
8. Police has been requested to register offence for using explosives which resulted in the death of the elephant.
9. Perambulation of additional forest fringes will be continued for collecting evidence. The perambulation is being conducted along vulnerable forest fringes in the entire State.
10. Suitable financial incentives would be given to the informants who help to crack the case, as per the norms.

Yours faithfully,

Principal Chief Conservator of Forests (Wildlife) &
Chief Wildlife Warden

276598/2020/PE

Wildlife Crime Control Bureau
वन्यजीव अपराध नियंत्रण ब्यूरो

GOVERNMENT OF INDIA
भारत सरकार
MINISTRY OF ENVIRONMENT
FORESTS AND CLIMATE CHANGE
पर्यावरण वन एवं जलवायु परिवर्तन मंत्रालय

2-23/2017-PG (PH)

Confidential

File No. 12-12/WCCB/2018/517

Dated: 08 June, 2020

To
The Director General of Forests & Special Secretary
Ministry of Environment, Forest & Climate Change
Government of India
New Delhi

O/o DGF & SS
Dy. No. 27590 4
Date 12/6/2020

Sub.: Progress report on investigation of pregnant Elephant death case in Kerala on 27.05.2020 –Reg.

Sir,

On the subject cited above, this is to inform that regarding death of a pregnant female elephant, a case vide OR No. 10/2020 U/S 2(16), 9, 39(a), 50(c) of The Wildlife (Protection) Act, 1972 has been registered at Mannarkkadu Forest Range, Mannarkkad Division, Kerala. In this matter, local police have also registered a separate case vide FIR No 571/2020 U/S 9 B (1) of The Explosive Act, 1884 & Section 11 of The Prevention of Cruelty to Animals Act 1960 at PS Mannarkkad. Local Authorities (Forest & Police) are working in close coordination. Ms. T. Uma, Regional Deputy Director, Southern Region, WCCB visited the crime scene on 05-06 June, 2020 and enquired in to the matter.

2. During investigation, one accused namely Joseph @ Wilson R/o Thodukadu Colony Ampalapara, PO Thiruvizhamkunnu, Mannarkkadu, Palakkad has been arrested on 05.06.2020. Combing operation are being jointly conducted by Police and Forest Authorities. The arrested accused has confessed his involvement in placing the Coconut filled with crackers at Korathipara area of Silent Valley Buffer Zone to kill wild boars on 12.05.2020. But as per his statement it was accidentally eaten by elephant. He disclosed that he works for the main accused Kunjani as a labourer. He also stated that he helps Kunjani in making crude bombs to kill wild boar/monkeys for meat consumption. After death of wild animals he helps clean their carcasses and Kunjani sells meat of the wild animals so killed, the portion left after their consumption. The accused has also confessed that he makes small crude bombs by mixing potassium nitrate, egg white, 2-3 pieces of small white stone with crackers wrapped with thread then places these small bombs in coconut to attract wild animals. On 12.05.2020 evening Kunjani called him and told him that one elephant got injured by bursting of coconut filled cracker meant for wild boars at Korathipara area of Silent Valley, that if the matter comes to the knowledge of the forest department they would be in trouble. Therefore he agreed to do the job and on 13.05.2020 he used country made crackers to drive out the injured elephant w hile using the crackers, the elephant was at Erangolamkunnu. The elephant was emanating foul smell. He did not see the elephant thereafter. On 23rd, Riyasudeen @ Manu S/o Kunjani informed to the Silent Valley staff over phone about presence of injured elephant in his plantation. As per his statement, accordingly the team of silent valley forest range staff reached the spot and examined the elephant and again the elephant was missing from 23rd.

IG(PE)
S
12/6

3. Efforts are being made to search main accused Kunjani and raids are being conducted at his possible hideouts. Report received from Regional Deputy Director, Southern Region, WCCB is also annexed with Annexures.

12/6

Yours faithfully

(Tilotama Varma)
Additional Director

PE

Encl.:A/A
Copy to: The Inspector General of Forests (WL), MoEF&CC, New Delhi.

A4-4217/2020

Office of the Divisional Forest Officer
Mannarkkad Division
Aranyakam- Mannarkkad.
Phone No. 04924 222574
e-mail :dfo.mrkd.for@kerala.gov.in
Dated: 5/6/2020

From,

K.K. Sunil Kumar
Divisional Forest Officer,
Mannarkkad

To

The Regional Deputy Director
Wildlife crime Control Bureau
Southern Region, Chennai

Sir

Sub : Death of elephant in Ambalapara on 27/05/2020 - reg.
Ref : That office letter No:23-31/WCCB –SR/2020 dated 4/06/2020

Kind attention is invited to the subject above. The details requested as per letter read above are submitted below.

1. Attested copy of wildlife occurrence report – Attached.
2. Attested copy of Mahazar- Attached.
3. Attested copy of preliminary postmortem report attached.
4. Treatment procedure /protocol being followed in Kerala in general and those done by RRT/Forest department in this case.

The procedures of rescue of animals depend on type of animal, place, magnitude of injury, stage of injury etc. The procedures are also decided by the team leaders based on past experiences and suggestions by Veterinary Surgeon. In the case of the elephant which was noticed on 25/5/2020 at Theyyakkundu near Ambalapara, Dr. Davis Abraham, AFVO was brought on the same day from Trissur. After examination of elephant, AVFO observed that the injury was very serious and survival of elephant is unlikely. Thereafter on 27/05/2020, we arranged kumki

elephants and tried to take out the elephant from river. But before our operation, the elephant died.

5. Attested copy of preliminary investigation report: No investigation report is prepared so far. We have arrested one Wilson S/O Babu today (05/06/2020). Involvement of Abdul Kareem @ Kunjani and one Riyasudheen S/O Abdul Kareem from a place known as Mundakunnu near Ambalappara has been established. They are absconding. Investigation in this case is in preliminary stage.
6. Attested copy of statement of suspects / miscreants –Nil
7. Complete address and profile of suspects
   1. Wilson S/O Babu Kalayil, Odakayam, Vettilapara P O. : Arrested on 5/6/2020.
   2. Abdul Kareem @ Kunjani, Othukumpurath House, Mundakunnu, Edathanattukara P.O. Palakkad Dist
   3. Riyasuddeen @ Maanu, S/o Abdul Kareem, Othukumpurath House, Mundakunnu, Edathanattukara P.O. Palakkad Dist

Brief of the case and progress in investigation.

- Presence of an injured elephant at Theyyakkundu near Ambalapara in Palakkad Dist was reported by Dy.RFO Thiruvizhamkunnu on 25/05/2020. The elephant was standing in Velliyar river. Wildlife Warden SVNP has arranged assistance of Dr. David Abraham AVFO Thrissur for its examination. Dr. David examined the above elephant and suggested that its survival is unlikely. Staff from RRT Mannarkkad and Forest station Thiruvizhamkunnu were deployed in the above area for its protection and to monitor its movement.
- On 26/05/2020, I have inspected elephant and after discussion with senior officials and other Veterinary Surgeons, it was decided to take the elephant out of water and provide treatment. Kumki elephants were arranged.

- Before taking the elephant out of water, it died on 27/05/2020 by evening about 4 pm.
- Post-mortem was done on 28/05/2020 at Mulakuvallam reserve forest and carcass was burnt.
- OR 10/2020 was booked in Thiruvizhamkunnu forest station on 28/05/2020, FRO Mannarkkad started investigation.
- One accused – Wilson S/O Babu Kalayil was arrested. He had confessed that the elephant was injured on 12/5/2020 near Ambalappara from the estate owned by Sri. Abdul Kareem Alias Kunjani and his son Riyasuddeen Alias Maanu. He had also submitted that the above persons are habitual hunters for meat and they have involved in many poaching cases in the adjoining forests. His statement also shows that they are expert in making country bombs (Panni Padakkam) and using them for poaching wild boar. In this case Abdul Kareem has placed such country bombs in his estate located near the forest boundaries inside coconut. The elephant got injured from one of such country bomb.
- As per the instruction of Principal Chief Conservator of Forests & Chief Wildlife Warden, verification of entire forest fringes in the state is in progress.
- Attempts are made to arrest other accused involved in death of the elephant.

Yours faithfully

(Divisional Forest Officer)

276598/2020/PE

FORM A I
ORIGINAL DUPLICATE
MAHAZAR [FIRST REPORT]

[See Appendix XI of Volume 3 of Kerala Forest Code]

1. Name of Division/Range/Beat where offence committed. — മണ്ണാർക്കാട് വനം ഡിവിഷൻ മണ്ണാർക്കാട് റെയിഞ്ച് തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷൻ.

2. Scene of offence – name of R.F. and name of place.

3. The place where and date on which the occurrence report was prepared.

— മണ്ണാർക്കാട് വനം ഡിവിഷൻ മണ്ണാർക്കാട് റെയിഞ്ച് തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷൻ പരിധിയിൽ വരുന്ന അമ്പലപ്പാറ തെയ്യംകുണ്ട് വെള്ളിയാർപുഴ പരിസരവും, പടക്കാടൻ ... ഉപ്പുകുളം റിസർവ്വ് വനത്തിനകവും.
27.5.2020, 28.5.2020

4. Nature of offence, relevant section of Forest Act and loss sustained to Government. — കാട്ടാനയുടെ അസ്വാഭാവിക മരണം വന്യജീവി സംരക്ഷണ നിയമം 1972 u/s 2(16) 9, 39 (a) 50 (c)

5. Name and address of accused persons and if the accused have been arrested, the details regarding the same. — പ്രതികൾ അജ്ഞാതനാണ്

6. Name and address of witnesses. — ഉണ്ട്

7. Name and quantity, value etc… of the property seized (Forest produces and other property). — തേറ്റ - 2 എണ്ണം.
(1) വലത് തേറ്റ - നീളം 24cm വ്യാസം - 6cm.
(2) ഇടത് തേറ്റ - നീളം 23cm വ്യാസം - 7cm

8. Name and other particulars of the officer with whom the seized property is entrusted. — തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷനിൽ സൂക്ഷിക്കുന്നു

9. Signature of the accused. — പ്രതികൾ അജ്ഞാതനാണ്

10. Signature of the witness — 1. [signature] 28/5/2020 2. [signature] 28/5/2020 3. [signature] 28-5-2…
(4) [signature] 28/5/2020 (5) [signature] 28/5/2020 (6) [signature] 28/5/2…

Place: ഉപ്പുകുളം

Date: 28.5.2020

True copy
[signature]
Divisional Forest Office
Mannarkkad

[signature]
Signature of the Officer
Who booked the case

മണ്ണാർക്കാട് വനം ഡിവിഷൻ മണ്ണാർക്കാട് വനം റെയ്ഞ്ച്
തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷൻ ബീറ്റ് ഫോറസ്റ്റ് ഓഫീസർ

1. K.K. മുഹമ്മദ് സിദ്ദീഖ്
2. C. അൻസിറ.

ഫോറസ്റ്റ് വാച്ചർ

3. P. അബു.

സെക്ഷൻ ഫോറസ്റ്റ് ഓഫീസർമാരായ

4. യു. ജയകൃഷ്ണൻ
5. ദ. ഹരിദാസ്

ഡെപ്യൂട്ടി റെയ്ഞ്ച് ഫോറസ്റ്റ് ഓഫീസർ

6. എം. ശശികുമാർ

റെയ്ഞ്ച് ഫോറസ്റ്റ് ഓഫീസർ

7. യു. ആഷിഖ് അലി.

FORM A 3
ORIGINAL/DUPLICATE
MAHAZAR/FIRST REPORT]

[See Appendix XI of Volume 3 of Kerala Forest Code]

1.	Name of Division/Range/Beat where offence committed.	Mannarkkad Forest division, Mannarkkad, Forest range, Thirumbadikunnu Forest Station.
2.	Scene of offence – name of R.F. and name of place.	Erabbalappara Theyyamkandda Velliyar river its premises and pasakkadas Extn - II, Mulakuvallam reserve under Thirumbadikunnu Forest Station, in mannarkkad range of mannarkkad division.
3.	The place where and date on which the occurrence report was prepared.	Erabbalappara Theyyamkkandu Velliyar river its premises and pasakkadas Extn-II Mulakuvallam reserve under Thirumbadikunnu Forest Station, in mannarkkad range of mannarkkad division. 27-05-2020, 28-05-2020
4.	Nature of offence, relevant section of Forest Act and loss sustained to Government.	On natural death of wild elephant, u/s 2(16 a, 39(a), 50 (a) of wild life protection Act 1972
5.	Name and address of accused persons and if the accused have been arrested, the details regarding the same.	Under investigation.
6.	Name and address of witnesses.	In over leaf
7.	Name and quantity, value etc... of the property seized (Forest produces and other property).	Tushes - 2 Right tush - L - 24 cm, G - 6 cm Left tush - L - 23 cm, G - 7 cm
8.	Name and other particulars of the officer with whom the seized property is entrusted.	Safe Custody in Thirumbadikkunnu Forest Station.
9.	Signature of the accused.	Under investigation
10.	Signature of the witness.	

Place: Mulakuvallam
Date: 28-05-2020

True copy

Signature of the Officer
Who booked the case

Divisional Forest Officer
Mannarkkad

Column - 6

1. K.K Muhammed Siddik - Beat forest officer - Thiruvizhamkunnu forest sti
2. C. Anseera - Beat forest officer. Thiruvizhamkunnu Forest Statio
3. P. Abdu - Forest watcher. " "
4. U. Jayakrishnan - Sector Forest Officer " "
5. O. Haridas - Sector forest officer. " "
6. M. Sasikumar - Deputy range forest officer " "
7. U. Ashique Ali - Range forest officer, Mannarkkad range.

[illegible]

[illegible]

ഡിവിഷണൽ ഫോറസ്റ്റ് ഓഫീസർ ആം. മണ്ണാർക്കാട്
ആയി ജോലി നോക്കുന്ന ഞാൻ. മണ്ണാർക്കാട് വനം ഡിവിഷൻ
മണ്ണാർക്കാട് വനം റേഞ്ച്, തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ്
സ്റ്റേഷൻ പരിധിയിൽ വരുന്ന അമ്പലപ്പാറ തെയ്യംകുണ്ട്
ഭാഗത്ത് മൂന്ന് ദിവസം മുമ്പ് വായിൽ പരിക്കുപറ്റിയ
നിലയിൽ ജനവാസ മേഖലയിലെത്തി സൈലന്റ്‌വാലി
ഡിവിഷൻ, മണ്ണാർക്കാട് ഡിവിഷൻ ജീവനക്കാരുടെ നിരീ-
ക്ഷണത്തിൽ വെള്ളിയാർ പുഴയിൽ ഇറങ്ങിയ കാട്ടാനയെ
കുങ്കി ആനകളുടെ സഹായത്തോടെ കരയ്ക്ക് കയറ്റി
ചികിത്സ നൽകുന്നതിന് വേണ്ടി മേൽ നിർദ്ദേശ
പ്രകാരം ഇന്ന് ദിവസം ഉച്ചയ്ക്ക് ശേഷം മൂന്ന് മണി
യോടെ കുങ്കി ആനകൾ സ്ഥലത്ത് എത്തി അവയ്ക്ക്
ആവശ്യമായ വിശ്രമം നൽകി നാല് മണിയോടുകൂടി
ടി കാട്ടാനയെ പുഴയിൽ നിന്ന് കരയ്ക്ക് കയറ്റുന്നതിനായി
എത്തിയപ്പോൾ ടി കാട്ടാന ആ വെള്ളത്തിൽ മുങ്ങി
നിൽക്കുന്നതായി കണ്ട് സ്ഥലത്ത് ക്യാമ്പ് ചെയ്യുന്ന
~~[illegible]~~ ഞങ്ങൾ അസിസ്റ്റന്റ് ഫോറസ്റ്റ് വെറ്ററിനറി സർജന്റെ
പരിശോധനയിൽ ടി കാട്ടാന ചരിഞ്ഞു എന്നറിയിച്ചതി-
നെ തുടർന്ന് സ്ഥലത്തെത്തിയ കുങ്കിയാനകളുടെ
സഹായത്തോടെ ടി കാട്ടാനയുടെ ജഡം വെള്ളത്തിൽ
നിന്ന് വലിച്ച് കരയ്ക്കെടുത്തു. ഞാൻ [illegible] ടി
കാട്ടാനയുടെ ജഡം വിശദമായി പരിശോധിച്ചതിൽ
ഏകദേശം 15 വയസ്സ് പ്രായം തോന്നിക്കുന്ന പിടിയാനയുടെ
മേൽ വലതുഭാഗം വായയുടെ മുറിവിൽ [illegible]
സ്ഥലത്ത് ഒരു [illegible] അഴുകിയ പുഴുവരിച്ച
നിലയിൽ വ്രണമായി കാണുന്നു. ജനവാസ മേഖല-
യോട് ചേർന്ന് കിടക്കുന്ന ടി സ്ഥലത്ത് വെച്ച് ടി
(തുടരും)

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കാട്ടാനയുടെ ജഡം പോസ്റ്റ്മോർട്ടം ചെയ്യുന്നതിന
സംഘടിപ്പിക്കുന്നതിന പ്രത്യേക ഗ്രൂപ്പ് ഉണ്ടാക്കുന്നു
അധ്യക്ഷനെ തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷൻ
പരിധിയിലെ മുള്ളത്തുപാറ റിസർവ്വിനകത്ത് സംഘം
കൊണ്ടുപോകുവാൻ തീരുമാനിക്കുന്നു. ടി
സ്ഥലത്തിന്റെ GPS റീഡിംഗ് പരിശോധിച്ചതിൽ N-
11° 03' 33", E. 076° 22' 39" എന്നിങ്ങനെ കാണുന്നു.
ടി കാട്ടാനയുടെ ജഡം KL.50.H.2602-ാം നമ്പർ ക്രെയിൻ
ഉപയോഗിച്ച് കെട്ടി ഉയർത്തി സ്ഥലത്ത് എത്തിയ
KL.35.6977-ാം നമ്പർ ടിപ്പർ ലോറിയിൽ
അമ്പലപ്പാറ, തിരുവിഴാംകുന്ന്, കാപ്പുപറമ്പ് വഴി
മുള്ളത്തുപാറ റിസർവ്വിന്റെ വടക്കേ അതിർത്തിയിൽ
എത്തിക്കുന്നത് സമയം ഏറെ വൈകിയതുകൊണ്ടും
ഇരുട്ടായതിനാലും പോസ്റ്റ്മോർട്ടം നടപടികൾ പൂർത്തി-
യാക്കുവാൻ കഴിഞ്ഞില്ല. ആയതിനാൽ, പിറ്റേ ദിവസം രാവിലെ
പോസ്റ്റ്മോർട്ടം നടപടികൾ പൂർത്തിയാക്കാമെന്നുള്ള
വെറ്റിനറി സർജന്റെ നിർദ്ദേശത്തെ തുടർന്ന് ടി
സ്ഥലത്ത് കാട്ടാനയുടെ ജഡത്തിന് കാവലുമായി
ബന്തവസ്സ് ഡ്യൂട്ടിക്കായി സ്റ്റാഫിനെ നിയോഗിക്കുന്നു.
ഇപ്രകാരം മഹസ്സർ തയ്യാറാക്കിയതിന് സാക്ഷ്യം
മണ്ണാർക്കാട് വനം ഡിവിഷൻ, മണ്ണാർക്കാട് വനം
റെയിഞ്ചിൽ തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷൻ പരിധി-
യിൽ വരുന്ന അമ്പലപ്പാറ ഭാഗം കൂട്ടി ഭാഗത്ത്
വെള്ളിയാർ പുഴയുടെ പരിസരവും, ടി സ്റ്റേഷൻ
പരിധിയിൽ വരുന്ന മുള്ളത്തുപാറ റിസർവ്വിനകം.
ഇപ്രകാരം മഹസ്സർ തയ്യാറാക്കിയത് ഞാൻ.
തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ് സ്റ്റേഷനിലെ ഡെപ്യൂട്ടി
ഫോറസ്റ്റ് റെയിഞ്ച് ഓഫീസറായ ടി. പി. അൻവർ 27/5/2020
(ഒപ്പ്)

[illegible]

[illegible]

[illegible] (4) (6) [illegible]

ഡിവിഷൻ ഫോറസ്റ്റ് ഓഫീസർ ശ്രീ. [illegible] 2/1
ഉത്തരവിനാലും പോസ്റ്റ്മോർട്ടം നടപടികൾ നിർത്തി
വെച്ചതിനാലും ഈ മഹസ്സർ ഇന്നേ ദിവസം താൽക്കാ
ലികമായി അവസാനിപ്പിക്കുന്നു. ഈ മഹസ്സർ ഇന്നേ
ദിവസം ഉച്ചക്ക് ശേഷം 4 മണിക്ക് തുടങ്ങി വൈകു
ന്നേരം 7.30 മണിക്ക് അവസാനിപ്പിക്കുന്നു.

27.5.2020-ന് വെള്ളിയാർ പുഴയിൽ ചരിഞ്ഞ കാട്ടാനയെ [illegible] നിലയിൽ കണ്ടുവന്ന് പോസ്റ്റ്മോർട്ടം നടപടികൾ നടത്താൻ [illegible] തുടർന്ന് താൽക്കാലികമായി നിർത്തിവെച്ച മഹസ്സറിന്റെ തുടർ മഹസ്സർ തയ്യാറാക്കാൻ 28.5.2020-ന് രാവിലെ സൈലന്റ്‌വാലി ഡിവിഷനിലെ അസിസ്റ്റന്റ് ഫോറസ്റ്റ് വെറ്ററിനറി ഓഫീസറുടെ സാന്നിദ്ധ്യത്തിൽ ടി കാട്ടാനയുടെ ജഡത്തിന്റെ അളവുകൾ പരിശോധിച്ചതിൽ വലതു മുൻകാലിന്റെ നീളം 160 cm ഉം, ഇടതു മുൻകാലിന്റെ നീളം 160 cm ഉം, വലത് പിൻകാലിന്റെ നീളം 115 cm ഉം, ഇടത് പിൻകാലിന്റെ നീളം 115 cm ഉം, വാൽക്കുറ്റി മുതൽ [illegible] വരെ 230 cm നീളവും, തുമ്പിക്കൈയുടെ നീളം 170 cm ഉം, തുമ്പിക്കൈയുടെ മധ്യവണ്ണം 55 cm ഉം, വാലിന്റെ നീളം 115 cm ഉം, വയറിന്റെ ചുറ്റളവ് 290 cm ഉം പിൻകാലിന്റെ പാദചുറ്റളവ് 90 cm ഉം, മുൻകാലിന്റെ പാദചുറ്റളവ് 95 cm ഉം

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മുൻകാലുകളിൽ 5 വീതം നഖങ്ങൾ പിൻകാലുകളിൽ 4 വീതം നഖങ്ങളും കാണാം. ടി ആനയുടെ മുഖം വിശദമായി പരിശോധിച്ചതിൽ വായയുടെ വലതുഭാഗം മുറിവുകളൊഴികെ മറ്റ് ബാഹ്യമായ പരിക്കുകളൊന്നും തന്നെ കാണാനില്ല. ഈ അവസരത്തിൽ ടി ആനയുടെ പോസ്റ്റ്മോർട്ടം നടപടികൾക്കായി തൃശൂർ ഡിവിഷനിലെ അസിസ്റ്റന്റ് ഫോറസ്റ്റ് വെറ്ററിനറി ഓഫീസർ ശ്രീ. ഡേവിഡ് എബ്രഹാം എത്തിച്ചേർന്നു:

Received the carcass of a female wild elephant for post-mortem examination and handed over same after post-mortem examination. Organs taken for laboratory examination. Instructed to bury the carcass.

Dr. David Abraham
Assistant Forest Veterinary Officer, Thrissur Division
28/5/2020

പോസ്റ്റ്മോർട്ടം നടത്തിയ ശേഷം ടി ആനയുടെ ജഡം കുഴിച്ചുമൂടുകയാണ്. പോസ്റ്റ് മോർട്ടത്തിനിടയിൽ വെടി പൊട്ടിച്ച ശേഖരിച്ച ടി പിടിയാനയുടെ ദേഹത്തുള്ള മാംസാവശിഷ്ടങ്ങൾ ശേഖരിച്ചു ചെയ്ത് അവ പരിശോധിച്ചതിൽ വലത് ഭാഗം ഏകദേശം 24 cm നീളവും, 6 cm മധ്യവണ്ണവും ആയതിന്റെ അഗ്രഭാഗം 6 cm നീളത്തിൽ ഒടിഞ്ഞ നിലയിലും, ഇടതു ഭാഗത്തെ ഏകദേശം 23 cm നീളവും, 7 cm മധ്യവണ്ണവും അതിന്റെ അഗ്രഭാഗം 8 cm നീളത്തിൽ തേയ്മാനം വന്ന നിലയിലും കാണാം. ടി ആനയുടെ ജഡാവശിഷ്ടങ്ങൾ മറവു ചെയ്ത്

[illegible]

[illegible]

[illegible]

നടത്തിയ കാട്ടാനയുടെ ജഡാവശിഷ്ടങ്ങൾ ലഭിച്ചത്
സാമ്പിളുകളായി വിദഗ്ധ പരിശോധനക്കായി വെറ്ററിനറി
ഓഫീസർ ശേഖരിച്ചിരിക്കുന്നു. തുടർന്ന് വെറ്ററിനറി
ഓഫീസറുടെ നിർദ്ദേശ പ്രകാരം പോസ്റ്റ്മോർട്ടം നടത്തിയ
സ്ഥലത്തിനോട് ചേർന്ന് KL.50.H 2322 നമ്പർ
JCB ഉപയോഗിച്ച് ആഴത്തിൽ കുഴിയെടുത്ത്
അതിൽ വിറകുകൾ അടുക്കി വെച്ച് ഡീസൽ ഒഴിച്ച്
തീയിട്ട ശേഷം അതിലേക്ക് പോസ്റ്റ്മോർട്ടം നടത്തിയ
ജഡാവശിഷ്ടങ്ങൾ കത്തിനായി വലിച്ചിട്ട് അതിനുമുകളിൽ
വീണ്ടും വിറകുകൾ ഇട്ട് ജഡാവശിഷ്ടങ്ങൾ പൂർണ്ണമാ-
യി കത്തി തീരുവാൻ വേണ്ടി ജാഗ്രതയോടെ പരിസരത്ത്
കാത്തുനിൽക്കുന്നു. ജഡാവശിഷ്ടങ്ങൾ പൂർണ്ണമായും
കത്തി തീർന്നെന്ന് ഉറപ്പുവരുത്തിയ ശേഷം പരിസര
മലിനീകരണം ഇല്ലാതെ തീക്കനൽ കുഴിയിലേക്ക്
മണ്ണ് പൂർണ്ണമായും ഇട്ട് മൂടുന്നു. ടി സ്ഥലത്തിന്റെ
GPS റീഡിംഗ് പരിശോധനയിൽ N. 11° 01' 15'',
E. 076° 22' 48'' എന്നിങ്ങനെ കാണുന്നു. ടി കാട്ടാനയുടെ
മരണം അസ്വാഭാവിക മരണമായതിനാൽ വന്യജീവി
സംരക്ഷണ നിയമം 1972 പ്രകാരം അതിന്
ആസ്പദമായ പ്രതികളെ, മറ്റ് സാഹചര്യങ്ങളും
അന്വേഷണത്തിൽ ഉപകാരം മഹസ്സർ തയ്യാറാക്കി-
യതിന് കുറ്റസ്ഥലം മണ്ണാർക്കാട് വനം ഡിവിഷനിൽ
മണ്ണാർക്കാട് റേഞ്ചിൽ തിരുവിഴാംകുന്ന് ഫോറസ്റ്റ്
സ്റ്റേഷൻ പരിധിയിൽ വരുന്ന [illegible] റിസർവ്
വനത്തിനകമാകുന്നു. ഈ മഹസ്സർ തയ്യാറാക്കിയതിന്

Divisional Forest
Mannarkkad

സാക്ഷികൾ [illegible]
[illegible] ഫോറസ്റ്റ് ഓഫീസർമാരായ (1) കെ. [illegible]
[illegible] 28/5/2020 (2) സി. [illegible]
(3) ഫോറസ്റ്റ് ഡ്രൈവർ വി. ശൈലേഷ് 28/5/2020 (4) സെക്ഷൻ
ഫോറസ്റ്റ് ഓഫീസർ ശ്രീ. സുബ്രഹ്മണ്യൻ 28/5/2020 (5) സെക്ഷൻ
ഫോറസ്റ്റ് ഓഫീസർ ഒ. ഹരികുമാർ 28/5/2020 (6) ഡെപ്യൂട്ടി
റേഞ്ച് ഫോറസ്റ്റ് ഓഫീസർ എം. ശശികുമാർ 28/5
(7) മണ്ണാർക്കാട് റേഞ്ച് ഫോറസ്റ്റ് ഓഫീസർ ശ്രീ.
ആഷിക് അലി. 28/5/20 ഈ മഹസർ
ഇന്ന് ദിവസം രാവിലെ 7 മണിക്ക് തുടങ്ങി 11.45
മണിക്ക് അവസാനിപ്പിക്കുന്നു.

True copy

Divisional Forest Officer
Mannarkkad

(4)

Preliminary Report

POST MORTEM EXAMINATION OF A FEMALE WILD ELEPHANT AT MANNARKAD FOREST DIVISION

On the request of the Divisional Forest Officer, Mannarkad Forest Division, I conducted the post mortem examination of a female wild elephant, which died in a stream adjacent to the Silent Valley National Park at Kottopadam Panchayath, Palakkad District on 27 May 2020. On the same day, the carcass was transported to a location suitable for post mortem examination near Thiruvizhamkunnu Model Forest Station. On 28 May 2020, the post mortem examination started at 7.00 am and ended at 9.00 am.

Major observations

Carcass of the female elephant with an estimated age of nearly 15 years was highly emaciated. Externally, right side of the lower jaw was swollen and there were open wounds at the oral commissure with the partially exposed bone of the body of mandible. No other major wound or injury of significance was observed on any other part of the body. On checking with a metal detector, no metallic object could be found in any part of the carcass.

The mouth was opened and examined at close quarters. Inside the mouth, extensive necrotic debris of various soft tissues were seen, fully infested with large maggots. Fracture and crosswise [illegible] portions of maxillary bones and medial portions of body of mandible were detected on both sides. Only very few lamellae of upper and lower molar teeth were present on both sides. All lobes of lungs, bronchi and bronchioles on both sides and trachea were filled with clear water. Stomach and intestine had copious amounts of clear water and were devoid of any food matter. The enlarged uterus had a foetus of nearly 10 cm length from forehead till the base of tail. No gross abnormality was seen in other internal organs. Samples of internal organs were collected for histopathology tests.

Inference on the cause of death

Water filled condition of lungs is an indication of drowning by the [illegible] of water, [illegible] respiratory failure, is the immediate cause of death of the elephant. The major and incapacitating wounds that led to localised sepsis in the oral cavity are evidences for severe traumatic injury and [illegible] most likely occurred following an explosive blast in the mouth. This has prevented the animal from taking food and water for several days and led to the severe debility and weakness.

Final post mortem examination report will be submitted on receipt of histopathology laboratory results of internal organs.

Thiruvizhamkunnu Forest Station

28 May 2020

DIVISIONAL FOREST OFFICE AYYANTHOLE THRISSUR-680 003

Dr. DAVID ABRAHAM
Assistant Forest Veterinary Officer
Divisional Forest Office,
Thrissur-680 003

True copy

Divisional Forest Office
Mannarkkad

(1)

ബഹുമാനപ്പെട്ട ഇൻസ്പെക്ടർ വിജിലൻസ് [illegible]
മാത്യൂസ് മുമ്പാകെ മലപ്പുറം ജില്ലയിൽ ഏറനാട് താലൂക്കിൽ
വെറ്റിലപ്പാറ (P.O), കൊടുമ്പുഴ മലയിൽ കാലായിൽ ബാബു
മകൻ വിൻസന്റ് (35/2020) സ്വമനസ്സാലെ പറഞ്ഞു തരുന്ന
മൊഴി.

അമ്പലപ്പാറ ഞങ്ങളുടെ ഭാഗത്ത് 27/5/2020 തീയതിയിൽ വെള്ളിയാർ പുഴയിൽ മരണപ്പെട്ട ആനയെ സംബന്ധിച്ച് എനിക്ക് അറിയാവുന്ന എല്ലാ കാര്യങ്ങളും സ്വമനസ്സാലെയാണ് ഞാൻ പറഞ്ഞു തരുന്നത്. ഈ മൊഴിയിൽ ആനയുടെ മരണവുമായി എനിക്കുള്ള ബന്ധവും ഞാൻ പറയാം. ഇപ്രകാരം നൽകുന്ന മൊഴി എനിക്കെതിരെ ഭാവി കോടതിയിൽ തെളിവായി നൽകുമെന്നും എന്നെ പറഞ്ഞ് ബോധ്യപ്പെടുത്തിയിട്ടുണ്ട്.

ഞാൻ എട്ടാം ക്ലാസ് വരെ പഠിച്ചിട്ടുണ്ട്. എനിക്ക് സ്വന്തമായി എഴുതാൻ കഴിയില്ല. കുറച്ച് വാക്കുകൾ മാത്രം അറിയാം. ഞാൻ നിലമ്പൂർ എടക്കര സ്വദേശിയാണ്. റബ്ബർ ടാപ്പിംഗ് ആണ് തൊഴിൽ. ഏകദേശം നാല് വർഷമായി ഒരു [illegible] കുഞ്ഞാണി എന്ന് അറിയപ്പെടുന്ന അബ്ദുൾ കരീം എന്ന ആളുടെ തോട്ടത്തിലാണ് ജോലി ചെയ്യുന്നത്. അബ്ദുൾ കരീം താമസിക്കുന്നത് അമ്പലപ്പാറയ്ക്ക് അടുത്തുള്ള [illegible] എന്ന സ്ഥലത്താണ്. അയാൾക്ക് [illegible] പറമ്പ് ഭാഗത്ത് വനത്തിനോട് ചേർന്ന് 15 ഏക്കറോളം സ്വന്തം കൃഷിസ്ഥലം ഉണ്ട്. [illegible] എന്നാണ് ആ സ്ഥലം അറിയപ്പെടുന്നത്. അവിടെ അടുത്ത് [illegible] എന്ന ആളുടെ ഉടമസ്ഥതയിലുള്ള [illegible] ഞാൻ കൂലി പാട്ടത്തിന് [illegible] 2000 രൂപ [illegible]. കുഞ്ഞാണിയുടെ കൃഷിയിൽ റബ്ബർ, തെങ്ങ്, കവുങ്ങ് എന്നിവയാണ് ഉള്ളത്.

കുഞ്ഞാണിയും മകൻ മാനു എന്നറിയപ്പെടുന്ന [illegible] ആനയെയും സ്ഥിരമായി പന്നിപടക്കം [illegible] വെച്ച് പന്നിയെ പിടിച്ച് [illegible] കഴിക്കുന്നവരാണ്. [illegible] പന്നി വെടി വെക്കാനും കൂടാതെ [illegible] പടക്കം വെച്ച് [illegible]

5/6/20

[illegible]
[illegible] കുത്താണിയുടെ [illegible]
[illegible] ചേർന്നുള്ള [illegible]
[illegible]
[illegible]
[illegible] കുത്താണി
[illegible]
[illegible] കുത്താണിയുടെ [illegible]
[illegible]

11/5/2020 തീയതിയിൽ കുത്താണിയും മകൻ മനുവും ചേർന്ന് കുത്താണിയുടെ [illegible] എസ്റ്റേറ്റ് [illegible] എസ്റ്റേറ്റിന് [illegible] വെച്ചിരുന്നു. 12/5/2020 ന് ഉച്ചയ്ക്ക് കുത്താണി [illegible] എസ്റ്റേറ്റിൽ വെച്ച് [illegible] [illegible] ആന [illegible] എസ്റ്റേറ്റിൽ [illegible] [illegible] NSS എസ്റ്റേറ്റ് [illegible] കുത്താണി [illegible] [illegible] നൗഷാദ്, മനോജ്, സന്തോഷ്, സനോജ്, കോഴിക്കോട് [illegible] ഡ്രൈവർ [illegible] [illegible] ദിവസം [illegible] 7.00 മണിയോടെ [illegible] കുത്താണിയുടെ തോട്ടത്തിൽ [illegible] കുത്താണി, മകൻ മനു [illegible] NSS എസ്റ്റേറ്റ് [illegible] [illegible] ഏകദേശം 15 വയസ്സ് [illegible] പിടിയാനയായിരുന്നു. [illegible]

5/6/20

അങ്ങനെ കടിക്കുമ്പോൾ താൻ കാണാറുണ്ടായിരുന്ന് എന്നു പറയുന്നു. ഈ രീതി അടുത്ത ദിവസം തിരിച്ച് കുഞ്ഞാണിയുടെ ഫ്ലാറ്റിൽ നിന്ന് അടുത്തുള്ള പറമ്പത്ത് പോകുമ്പോൾ ഞാൻ വീണ്ടും ഈ രീതിയിൽ NSS ഫ്ലാറ്റ് പറമ്പത്തേക്ക് തിരികെ കടിച്ചു വിടുന്നു.

കുഞ്ഞാണിയും മകൾ മനുവും ചേർന്നാണ് പന്നിപ്പടക്കം ഉണ്ടാക്കുന്നത്. ഞാൻ മുമ്പ് ഇത്തരത്തിൽ പടക്കം ഉണ്ടാക്കിയിരുന്നെങ്കിലും ഇപ്പോൾ അത് ചെയ്യാറില്ല. ഞാൻ പന്നിപ്പടക്കം വെക്കുമ്പോൾ ഞാൻ കുഞ്ഞാണിയോടും മനുവിനോടും ഒപ്പം പോകാറുണ്ട്. 11/5/20ന് കുഞ്ഞാണിയുടെ ഫ്ലാറ്റ് അതിർത്തിയിൽ പന്നിപ്പടക്കം വെച്ചപ്പോഴും അവരുടെ കൂടെ ഞാൻ പോയിരുന്നു. കുഞ്ഞാണിയാണ് അന്ന് പടക്കം കൊണ്ടുവന്നതും തേങ്ങയിൽ പൊതിഞ്ഞ് പടക്കം സ്ഥാപിച്ചതും.

മിലന്റെ മാർജിൻ സ്റ്റോറിൽ നിന്നാണ് കുഞ്ഞാണി പൊട്ടാസ്യവും പലപ്പോഴായി ഞാൻ അറിയപ്പെടുന്ന വെടിമരുന്നും പന്നിപ്പടക്കം ഉണ്ടാക്കുന്നതിനായി വാങ്ങിയിരുന്നത്. പൊട്ടാസ്യവും ഗന്ധകപ്പൊടിയും ഒരേ അളവിൽ ചേർത്ത് നന്നായി കുഴച്ച് ആവശ്യത്തിന് വെള്ളാരം കല്ല് പൊടിച്ചതും ചേർത്ത് പൊതിഞ്ഞ് കെട്ടിയാണ് പന്നിപ്പടക്കം ഉണ്ടാക്കുന്നത്. അതിന് മുകളിൽ കരിക്കിന്റെ കാമ്പ് ചുരണ്ടിയെടുത്ത് വെയിലത്ത് വെച്ച് വാട്ടിയെടുത്തതിന് ശേഷം നൂലിട്ട് കെട്ടിവെക്കാറുണ്ട്. ഇത് മൃഗങ്ങളെ ആകർഷിക്കുന്നതിനാണ്. ഇത്തരത്തിൽ ഉള്ള പടക്കം കടിക്കുന്ന മൃഗത്തിന് പരിക്ക് പറ്റുകയും ചിലപ്പോൾ മരിച്ചുപോകുകയും ചെയ്യും. ഇത്തരത്തിൽ പരിക്ക് പറ്റുകയും മരിക്കുകയും ചെയ്യുന്ന പന്നികളെ ഇറച്ചിയാക്കി കുഞ്ഞാണിയും മകൾ മനുവും പലതവണ കഴിച്ചിട്ടുണ്ട്. അതിൽ കുറച്ച് ഇറച്ചി എനിക്കും തരാറുണ്ട്. കുഞ്ഞാണിക്ക് ഒരു നാടൻ തോക്കും ഉണ്ട്. തോക്കും തിരകളും പന്നിപ്പടക്കങ്ങളും താൻ ഉണ്ടാക്കുന്ന മരുന്നും കുഞ്ഞാണി

(2)

ഈ [illegible] [illegible] [illegible] [illegible] [illegible]. [illegible] ഞാൻ [illegible] [illegible] [illegible] [illegible] [illegible] ഞാൻ [illegible]. [illegible] 12/5/20 ന് [illegible] [illegible] [illegible] [illegible].

ഭീഷണിയിലും മറ്റും ഞാൻ സത്യം പറഞ്ഞാൽ എന്നെ കൊല്ലുമെന്ന ഭയത്താലാണ് ഞാൻ സംഭവത്തിന് ശേഷം ഇതുവരെ സത്യം പറയാതിരുന്നത്. ഞാനും 12/5/20 ന് ആനയെ കാട്ടിൽ കണ്ടപ്പോൾ ആന ചെരിഞ്ഞിട്ട് ഒരു പ്രത്യേക ഗന്ധം ഉണ്ടായിരുന്നു. പാർട്ടിയിൽ [illegible] ലീഡർ ജോസഫ് ആണ്. [illegible] ജോസഫ് ആണ്. [illegible] [illegible] [illegible] എന്റെ പേര് വിൽസൺ എന്നാ[illegible].

ഈ മൊഴി നൽകുന്നതിന് എനിക്ക് ഭീഷണിയോ [illegible] ആരുടെയും പ്രേരണയോ [illegible] ഉണ്ടായിട്ടില്ല.

വിൽസൺ

ഈ മൊഴി ഞാൻ പ്രതിയെ വായിച്ചു കേൾപ്പിച്ചു. ശരി സമ്മതിച്ചു. മൊഴി എന്റെ കയ്യക്ഷരത്തിൽ രേഖപ്പെടുത്തി

[illegible]
ജോസഫ്

8.30 AM
5/6/2020

കെ. കെ. സുനിൽ കുമാർ
ഡിവിഷണൽ ഫോറസ്റ്റ് ഓഫീസർ
മണ്ണാർക്കാട് ഡിവിഷൻ.

(6)

STATEMENT OF JOSEPH ACCUSED OF WLOR.NO.10/2020TFS DT27.05.20

DATE: 05.06.2020

PLACE: THIRUVIZHAMKUNNU FOREST STATION

1. What is your name?

   My name is Joseph @ Wilson

2. What is your current and permanent address?

   I am presently residing at Thodukadu Colony,

   Ampalapara, Thiruvizhamkunnu (PO), Mannarkkadu, Palakkad, Kerala.

   b. My permanent address is: Malayelkalai, Vettlaipara (PO),

   Arehikodu, Malapuram, Calicut,

3. What is your education?

   I have studied up to 8th std,

4. What is your profession?

   I am a farmer, and I do rubber tapping.

5. How old are you?

   I don't know exact age, but I may be 34yrs old.

6. Are your married?

   I am not married and I am living with a married women.

7. Do you have children?

   Yes I have 4yr old boy.

8. Do you have bank account?

   Yes I had at Arihikode but presently I am not using the SBT bank account.

9. Do you have any friends?

   Yes I am having two friends 1. Manoj & Sanoj but both are relavives.

10. Do you have enemies?

    I don't have enemies. As I am being labour of Kunjanni , Kunjanni's enemies sometimes they feel like as I am their enemies.

11. Are you vegetarian or non vegetarian?

    I am a non vegetarian, but I eat only chicken.

12. What is your father and mother?

    My father is farmer and my mother is housewife.

13. Do you have any land for farming?

    I don't have the farming land. Recently I have got some land from for banana cultivation and I

Started farming since this Jan-2020. And have planted around 2000banan trees.

14. Can you explain about your family?

We are three for my parents. One girl name Sitha married and my elder brother name is Beena he is also a farmer. Myself Joseph I am a labour.

15. Are you a hunter?

No, I am not a regular hunter. But I have hunted 4 monkeys last four year in Ampalapara and I have utilized for consumption.

16. Do you have hunting experience?

No sir, but whenever Kunjanni hunts the animal with help of country made crackers. He used to call me for cleaning and cutting.

17. How do Kunjanni clean the meat?

Whenever wild boar is hunted, I do help for cleaning. After cleaning he carries the meat with his Yamaha RX 100 to the market. So far I have cleaned around 15 wild boars. (Last four years)

18. Do you have LIC or any policy in your name?

No I don't have the policy on my name

19. How many times did you help for cleaning the wild boar?

Around 15 time in last four years.

20. Anybody hunting wildlife in your area?

No sir, but our kunjanni use to hunt wild boar.

21. Do you have Gold in your house?

Yes I am having two pawan.

22. Do you have permanent house?

No sir I am staying with my wife house.

23. Do you have vehicle?

No I don't have vehicles.

24. How come you got relationship with Kunjanni?

I am basically a malapuram person. Four years before Rafi introduced to Kunjanni. Since last four years I am working with Kunjanni. I do rubber tapping.

25. How come you are in this hunting business?

I don't hunt wildlife but whenever Kunjanni hunts the wild boar and monkey he call me for cleaning the meat. However, Kunjanni use country made cracker (Panni Padakkam) for hunting wildlife.

26. Where do Kunjanni places country made crckers?

He use to regularly place country made crckers at Korathipara.

27. Any wildlife case registered against you?

No

28. Do you know the process of country made cracker making?

Yes I know. Two chemicals Potassium and Panavola mixed with water or egg white and added two to three pieces of white stone (small pieces) after mixing these ingredients thre crcker wrapped with thread and it will be dried on sunlight. Later it can be used with any stuff. This one Kunjanni kept it inside the coconut for wild boar unfortunately the elephant baited the coconut cracker and busted and the Elephant has got injuries.

29. Is there any pineapple form around Ampalapara?

Here we won't plant pineapple cultivation. Only we can get pineapple plantation in Malapuram area. That is for away from this place. We do only Rubber, Banana, Arica and coconut.

30. Is there anybody making country made crackers in Amplapara?

No idea sir.

31. Explain about recent Elephant hunting?

Sir as I am being a worker of Kunjanni. I do ruboer tapping. And occasionally he uses to call me for cleaning the wild boar. I remember that on 12.05.2020 evening he called me and informed that I had placed a Panni Padakkam for wild boar at Korathipara area of silent valley buffer zone. But unfortunately the wild elephant got in to trap. If the matter comes to know the Knowledge of forest department we will be in trouble. And we need to drive out the elephant from this place to avoid any complication in future. Therefore I have agreed to do the job and on 13.05.20 I have used country made crackers to drive out the injured Elephant. While using the country made cracker the elephant was at Erangolamkunnu to up side of the hillock. After that I didn't see the elephant. When the time of drive out I have got foul smell from the Elephant. Again on 23rd Riyasudeen @Manu S/o Kunjanni informed to the Silent valley staff over phone about presence of injured Elephant in his plantation. Accordingly the team of silent valley forest . range staff reached the spot and examined the elephant. And again the elephant was missing from 23rd.

The statement is recorded by me.

WLI. Kochi 5/6/20

Translated by me

5/6/2020

Statement of Dr.David Abraham, Assistant Veterinary Officer in charge of Palakkad Forest Division

Q: When you got the information about the injured elephant

A: On 25th May 2020 from the staff of Silent Valley Forest Division. Immediately I had consulted with my senior officers like Dr.Arun Zakaria and Dr. Easwaran about the condition of injured elephant and reached the spot where, I have found the elephant in pool of water. My seniors informed me nothing could be done at this juncture I also gave it writing that the prognosis of the animal is grave and even if it is drive back to the forest there is a very limited scope of revival. Practically we can say the probability of saving the animal is nil in this case.

Q: Staffs are informed me that the elephant went to the river while driving it into the forest. Had it been in the land. is there any possibility to save the elephant ?

A: On the extent of the structural damage, we have to look this as an accident case in the hospital if a man comes with his ribs broken and pierce into the heart that man cannot be revived. In that way we have to look this. It is a causality case. Based on the structural damage happen to animal where the tongue has gone and both the teeth kept open and the jaws fully swollen, we call it as "Incapacitating injury "where the efficiency of the organ cannot be revived

Q: In the media there was a news that the animal had a pineapple stuffed with an explosive. What is your opinion about this?

A: I never used the word pineapple. My opinion is exactly what I had written in my preliminary report. Blast has occurred in the mouth, both upper and lower bones were damaged and there is no evidence of pineapple or any other bait or nature of the gun powder. I don't have any idea.

Q: Had you been informed earlier about the injuries of Elephant by 20th May 2020 or even before, Was there any possibility to revive the animal

A: Very limited possibility to revive the animal. We may reduce the pain and sufferings of the animal

Q: Generally, what is the kind of standard protocol you are following to treat the animal with injuries

A: General treatment protocol is back to basics. Being a wild animal, we have to sedate or tranquilize the animal in this case the animal was not fed for many days hence the tranquilization

Q: Do you have general protocol to treat the injured animal like this

A: It is back to basics only since it is a wild animal, we cant approach and we need to tranquilize.

Q: You mean to say there is no general protocol but it vary on case to case basis, shall I take it like this.

A: Yes madam

Q: You meant to say there is no standard SOP.

A: Basic PM guidelines and ethics needs to be followed. In this case I have followed correctly. Animal died on 27th May 2020. ethics tells me that it has to been done on sunlight. Hence I have stayed back in Inspection Bungalow and I did PM on the next day. 7 O clock in the morning I have started and finished by 9 O clock.

Q: Is it pregnant

A: Yah. Towards the end I found when I took organ by organ it suddenly popped up.

Q: What is the age of the elephant

A: Estimated age is 15 years

Q: How old is the baby elephant

A: From the forehead to base of the tail is about 10 cm. So the estimation is around 2 months

Q:What is your suggestion to prevent these kind of injuries to the animal

A: Wildlife wing of the forest department must be equipped well and vacant position of the forest veterinary doctor shall be filled immediately

Q: Do you want to share anything else

A: My personal opinion about this case is even though we tried to drive the elephant to the forest, It would have been collapsed on the way. To be frank nothing we could do in this case.

Q: Thank you for your information.

A: We have taken best possible efforts mam, Thank you

Reworded by me

RDD, WCCB, SR.

Q: What is your Name, Designation

A: MohananKrishnanan, Section Forest Officer, Mannarkkad Range

Q: Are you belong to this RRT Team?How many of you were there in the rescue team.

A: I am incharge of the RRT, along with me 6 persons were in the team including two BFO and watcher

Q: When you sight the injured elephant first.

A: 25th May 2020

Q: How did you got the information?

A: From Silent Valley Staff.

Q: How many days the elephant was sighted in the Silent Valley jurisdiction

A: From 23rd onwards

Q: What you did after getting this information.

A: We are trying to drive away the elephant towards the forest from the Velliyar river

Q: What kind of injuries you have witnessed

A: It has injuries in the mouth and not having food and it looks very sick

Q: Did you try to give medical treatment to the injured elephant

A: We tried and veterinary doctor arrived on 25th May evening

Q: Did he gave any treatment to the animal

A: He informed that the elephant could not be tranquilized when it is in the river

Q: It is informed by the public that it was roaming with the injuries from 20th May onwards. From 20th May is there is any effort to treat the animal

A: I don't know.I can only say about my division.

Q: How was the issue appeared in the media

A: Before my face book post the issue was appeared in the media

Q: What is there in your face book post

A: I wrote my general feelings about the injured elephant and I didn't offend anybody in my face book post

Q: In your mind any particular person as suspect

A: No

Q: What about your opinion about Mr Wilson. Are you the part of the investigation team?

A: No, I don't know.

Q: Describe about your observation after you sighted the elephant on 27th May 2020 till its death

A: Based on the direction of the DFO, we tried to bring two Kumki elephant from Dhoni, Palakkad and tried to bring the elephant out of the river but our efforts were failed. The elephant died by 4.00 Pm . Veterinary doctor reached around 4.30 Pm on 27th evening and informed that the elephant was death.Later by using fire force we recovered the elephant out of the river with ropes and using cranes we lift the elephant into the lorry. We have reached Mullakuvallam forest area around 6.00 Pm. On 28th May 2020 Postmortem was done by the Dr. David Abraham, Veterinarian, Mannarkkad Range Forest Officer, Deputy Range Officer, Thiruvizamkunnu, staff of Thiruvizamkunnu station and RRT staff, totally around 15-20 members.

Q: What is the observation of veterinary doctor after the PM

A: It is pregnant,

Q: Is there is any NGO or General Public found during post mortem

A: Only the staff and veterinary doctor were present at that moment.

Q:Do you want to say anything more

A: No, I don't

Read found correct

Mohanakrishnan
Secha Forest Officer
Mannarkkad Range

Recorded by me
on 5/6/2020
at Mannarkad.

T. Uma IFS
RDD, WCCB, Chennai

Q: Name and designation

A :Rajeesh, Beat Forest Officer, RRT Mannarkkad.

Q: Did you present at the time of rescue operation

A: Yes

Q: How many of you were there

A: Totally 7 persons including one civil police officer

Q: Q: When you sight the injured elephant first.

A: 25th May 2020, morning in the river later on It went to the Village namely Ambalappara.

Q: Did any of the villages attacked the elephant

A: No

Q: How was the injury happened to the elephant

A: May be due to explosives

Q: Do you have come across any suspects

A: No, I don't know

Q: Do you know any person arrested in this regard ?

A: Yes, I Know, Mr. Wilson

Q: How do you know him?

A: Through media only

Q: When was the injured elephant sited outside the forest area

A: I don't know but I heard that some elephant was injured in Silent Valley area.

Q: Local people informed that they have witnessed the elephant in Nilambur Forest area.Do you have any idea

A: No. I don't have

Q: When was the veterinary doctor informed

A: On 25th May 2020

Q: How the elephant went to the river

A: When we have trying to drive the elephant from the private land to the forest the animal went to the river.

Q: Apart from Wilson anybody else involved in the crime

A: I don't know

Q: Why the animal was not treated by the veterinary doctor

A: May be due to serious illness of the animal

Q: Do you witnessed the PM

A: Yes, I was there

Q: How many of you were there

A: Around 15 members including veterinary doctor and Range Forest Officer, Mannarkkad

Q: Do you want to say anything more

A: No, nothing

Recorded by me.

T. Uma IFS
RDD, WCCB, Chennai

Read found correct

K. RAJEESH.
BEAT FOREST OFFICER
MANNARKKAD RANGE.

Qn: What's your names?

Ans: Sajad, Abid and Saji.

Qn: Are you all from this local area, Ambalappara?

Ans: Yes

Qn: How that elephant killed? You have any information?

Ans: When we saw the elephant it was having wound.

Qn: When did you Ist saw elephant here?

Ans: Elephant was here for 3 days. It came first on 25th May.

Qn: Have you seen elephant here before?

Ans: Elephants used to come here, whenever we find elephants here we used to drive them into forest by using crackers.

Qn: Is there any similar incident in the past from the same area?

Ans: No.

Qn: Do you have any idea how this was happened?

Ans: We don't know, when this elephant came here it was having wound it its mouth.

Qn: Does anybody shoot animals here?

Ans: Nobody does it here. No one knows as well.

Qn: Where do the perpetrators make explosives? Is there any quarry nearby?

Ans: No quarry here. People use local fire crackers to scare elephant not explosives. Place next to this area is Karuvarakunddu where there are large number of pineapple farming. Elephants used to come here from that area. Karuvarakundu is 10-15 Km away from Ambalappara if we go by crossing this mountain.

Qn: Does anybody sighted this particular elephants there at Karuvarakundu?

Ans: Some says so. Few days before we sighted here at Ambalappara.

Qn: Do you have any suspect?

Ans: No

Qn: Does people in Karuvarakundu used to use explosive stuffed pineapple to kill wild animals?

Ans: We don't know.

Qn: In last 10 year any similar incidents of wild life death?

Ans: Nothing from Ambalappara, but there was a wild boar poaching case using local explosives at Attappady few months back. People here don't harm elephants even after elephant attack on local labour. We just scare elephant and drive into forests. Wild boars are mainly found in fringes.

Qn: Does Government give compensation in all crop loss cases by wildlife ?

Ans: Yes. We all get compensation in cases of crop loss by wild life without delay.

Recorded by me

RFO.

(1)

NOTE

In Mannarkkad Police Station limit, Mannarkkad Forest Division Mannarkkad Forest Range, Thiruvizhamkunnu Forest Station limit at AmbalapparaTheyyamkundu area one wild female elephant inflicted with injuries in mouth was wandering for the last three days in residential areas. On 27.05.2020 Deputy Range Officer Sri.Sasi Kumar and forest team tried to get back the elephant to forest itself but failed in their attempts and on the next day morning the elephant was found dead in Chelliyar River. With the help of Kunki elephants the body of deceased elephant was taken to the river side and it is found that the elephant has suffered a wound in the mouth.

On preliminary enquiry by the Forest Officials it is known that the elephant has chewed an explosive stuffed pineapple which may have caused the death of the elephant. In connection with this incident, Mannarkkad Forest Range Officer has filed a complaint at Mannarkkad Police Station and Mannarkkad Police registered a case in Crime No. 571/2020 U/s 9 (B) (1) (b) of Explosive Act 1884 and Section 11 (1) (l) of Prevention of cruelty to Animals Act 1960 on 03.06.2020. Postmortem report states that the elephant is pregnant.

Depending on the gravity of the case a special investigation team (SIT) has been constituted on 04.06.2020 under the direct supervision of Deputy Superintendent of Police, Shoranur and the case is entrusted to Inspector Station House Officer, Mannarkkad for investigation.

PRINCIPAL CHIEF CONSERVATOR OF FORESTS
(WILDLIFE) & CHIEF WILDLIFE WARDEN, KERALA

Forest Headquarters
'Vanalakshmi'
Thiruvananthapuram – 695014
Phone (O) 0471 2321610
Fax 0471 2320654
Email cww.for@kerala.gov.in

No.WL1-41175/18 Dated 01.08.2019

To

All Circle Heads (Territorial/ Wildlife)

Sir,

Sub: Standard Operating Procedure for dealing with death of Schedule –I, Schedule II (Part II) species other than tiger, leopard & Marine animals -reg:

Ref:

The Standard Operating Procedure for dealing with death of Schedule –I, Schedule II (Part II) species other than tiger, leopard & Marine animals is enclosed herewith for information and necessary action.

Yours faithfully,

Encl as above

for Principal Chief Conservator of Forests (Wildlife) &
Chief Wildlife Warden, Kerala

01/08/2019

STANDARD OPERATING PROCEDURE FOR DEALING WITH DEATH OF SCHEDULE I SCHEDULE II (PART II) SPECIES OTHER THAN TIGER, LEOPARD & MARINE ANIMALS

KERALA FOREST AND WILDLIFE DEPARTMENT

STANDARD OPERATING PROCEDURE FOR DEALING WITH DEATH OF SCHEDULE I SCHEDULE II (PART II) SPECIES OTHER THAN TIGER, LEOPARD & MARINE ANIMALS

1. **Title :**

   Standard Operating Procedure for dealing with death of Schedule I SCHEDULE II (PART II) species other than tiger, leopard & marine animals

2. **Subject :**

   Wildlife Mortality

3. **Reference :**

   Advisories of NTCA/ Circulars/Guidelines issued in this regard.

4. **Purpose :**

   To ensure that the reasons for the wildlife death are ascertained and has arrived at a logical conclusion.

5. **Short Summary :**

   This Standard Operating Procedure(SoP) provides the basic, minimum steps which are required to be taken at the field level for dealing with the incidents of wildlife mortality of Schedule I, Schedule II (Part II) other than Tiger, Leopard, and Marine animals, where the carcass is available or the body parts have been seized.

6. **Scope:**

   The SoP applies to all forest field formations including Tiger Reserves besides other areas where the incident has occurred.

7. Targeted Species :

Deaths of Otter, Elephant, Four Horned Antelope, Slender Loris, Lion Tailed Macaque, Nilgiri Langur, Malabar Giant Squirrel, Grizzled Giant Squirrel, Travancore Flying Squirrel, Indian Pangolin, Sloth Bear, Asian Small Clawed Otter (Clawless Otter), Leopard Cat, Rusty Spotted Cat, Mouse Deer, Four Horned Antelope Nilgiri Tahr, and other Schedule I & Schedule II animals other than marine animals reported within or outside forest areas, shall be dealt with this protocol.

8. **Reporting of mortality incidents** ***(Responsibility:***

Assistant Wildlife Warden/ Range Forest Officer)

The field staff on knowledge of wildlife mortality shall immediately report such incidents of death to the concerned Asst. Wildlife Warden/ Range Forest Officer. The AWLW/ RFO in charge of the area where the carcass is found shall immediately report the incident to the concerned Wildlife Warden/DFO and has to update the data in the online portal www.wildlife.hawkkeralaforest.in . Concerned officials (DFOs/WLWs/DDs) in charge of the Division shall furnish a preliminary report of the death ***(Format attached as Annexure1)*** to the PCCF (WL) & CWW and CFVO within 24 hours, and shall ensure that the data is being updated in the online module.

9. **Identification of the Species (*Responsibility : WLW/DFO/DD)***

In case of taxonomic ambiguity with respect to the carcass, due to decay, decomposition or any other reason, technical assistance from experts of Department of Wildlife Sciences, College of Forestry, Kerala Agriculture University/ KFRI/ ZSI

Western Ghats Regional Centre, Kozhikode/KVASU /Wildlife Institute of India/ LACONES, (CCMB, Hyderabad) may be sought by the concerned WLW/DFO/DD.

10. **On site action *(Responsibility : AWLW/FRO)***

i) The place where a wildlife offence or a wildlife death has been occurred or committed is referred to as scene of Crime/ Occurrence.

ii) The area where carcass is lying shall be cordoned off with rope or tape to ensure that the evidences are not disturbed.

iii) The carcass shall not be disturbed until a veterinarian examines it and note initial observations.

iv) The prime objective of crime scene investigation in the incidences of poaching or unnatural death of wild animals is to establish (i) how the animal was killed, (ii) where the animal was killed and (iii) what could be the possible date and time of killing/death and (Iv) and possible cause of death.

v) On reaching the Scene of crime/ Occurrence the staff shall prepare a site mahazar. The site mahazar shall be prepared according to the way of search and seizure of materials and evidences in a progressive manner.

vi) A reasonable extent of the area surrounding the place where the carcass or the body parts are lying should be demarcated for conducting search to trace evidence. No material, objects ,valuable signs and symptoms lying within the scene of wildlife crime shall not go un noticed and un recorded. If the search

area of the scene is small, strip or grid method should be followed when the area is of significant size, the zone method should be adopted.

vii) The dimensions of the carcass shall be taken and the measurements have to be recorded in the mahazar. The measurements shall be taken in a way starting from head to tail. Unique features of the animal if any shall also be recorded in the mahazar. The measurements of tusk, tushes, cavity, wounds, injuries shall also be taken and be recorded in the mahazar.

viii) The oldness of the carcass, approximate age of the animal, sex of the animal, symptoms of possible death has to be mentioned in the mahazar.

ix) In the case of putrefied carcasses where it is not possible to record the measurements it shall be noted specifically.

x) The preliminary symptoms of poaching, hunting, poisoning, electrocution, explosives if any shall be recorded in the mahazar.

xi) The details of symptoms for fight between the animals, damages in the undergrowth, attack by other wild animals, signs for the presence of other animals, natural predator hunting, and analysis of the fecal samples of the death animal shall be done and shall be recorded in the mahazar.

xii) The crime scene should be thoroughly searched for evidences like empty cartridges, empty bottles, broken pieces of traps and tools used in the poaching and if found the same should be collected, packed

and sealed for further investigation and shall specifically mentioned in the mahazar.

xiii) Rivers, lakes or other water bodies nearby the scene of crime should also be inspected for the collection of evidence as the poachers wash their body or tools used in deskinning the animal in the nearby water bodies or rivers. Any of the biological remains suspected that of the accused shall be seized for further DNA identification of the accused and shall properly recorded in the mahazar.

xiv) The site mahazar shall be drawn during day time preferably after 8.00 am and before 5.00 Pm.

xv) The area, location, GPS readings, Reserve, Range, Division limits shall be mentioned in the mahazar.

xvi) In case of suspected poaching or in cases of unnatural death a location sketch and sketch of the scene of crime has to be prepared.

xvii) Photos and videos of the site, evidences obtained, if any, and of the carcass from different angles shall be taken and safely stored in a retrievable manner.

xviii) In the cases where the accused are arrested and the scene of offence is detected by way of leading by accused the matter has to be well mentioned in the mahazar and any recoveries made in accordance with the statement of accused has also to be recorded in the mahazar in the same way.

xix) If the scene of crime is outside the forest areas or near to fringe areas two independent witnesses may be included in the mahazar.

xx) The oldness of the carcass, approximate age of the animal, sex of the animal, symptoms of possible death has to be mentioned in the mahazar.

xxi) The site mahazar has to be verified by the Range Forest Officer.

xxii) After the preparation of the site mahazar and other material evidence collection the carcass has to be taken in to safe custody and the scene of crime has to be demarcated for postmortem procedures

11. Post Mortem of the animal *(Responsibility : AWW/RFO/FVO/AFVO/)*

i) In cases where a carcass is found, Postmortem examination of the carcass should be done by a veterinary surgeon or by a team of veterinary surgeons as per the guidelines issued in this regard.

ii) The service of FVO/AFVO shall be sought for the post mortem and in case of non availability of FVO/AFVO services of local veterinarians shall be sought after consulting with CFVO.

iii) Post Mortem Site should be cordoned off and secured using black cloth if required to prevent unauthorized photography and interference.

iv) The postmortem mahazar has to be prepared by a forest officer not inferior to the rank of Range Forest Officer.

v) It shall be specified clearly that the postmortem mahazar is drawn for the carcass mentioned in the site mahazar drawn on a particular date.

vi) The carcass has to be handed over to veterinary surgeon for conducting postmortem and has to be recorded in the mahazar.

vii) The dimensions, age , sex, and oldness of the carcass has to be recorded as rendered by the veterinary surgeon and has to be verified with the details recorded in the site mahazar.

viii) The details of wounds, injuries signs and symptoms, external appearance as rendered by the veterinary surgeon has to be recorded in the mahazar.

ix) The possible cause of death, assumptions for the death, signs and symptoms as rendered by the veterinary surgeon has to be recorded in the mahazar.

x) The carcass has to be examined with metal detector and the details of detection if any should mention in the mahazar.

xi) In case where fire arms are used, the pellets or the bullets should be retrieved from the carcass during Post Mortem examination to identify the type of the fire arms used. Pellets or bullets should be sent to the forensic science laboratory for examination by the ballistic expert to ascertain the type of fire arm used.

xii) The pellets or the bullets retrieved from the carcass shall be handed over to the IO, and shall be properly seized, labeled, sealed and shall be recorded in the mahazar.

xiii) In cases where only body parts like bones, pieces of flesh, hairs blood etc are found, the same should be collected, sealed and preserved preferably by the Veterinary Surgeon following all the legal formalities. The body parts thus sealed and preserved should be properly labeled and signed by the veterinary surgeons, independent witness and the investigation officers.

xv) In case of killing by poisoning, the veterinary surgeon should be requested to preserve samples of viscera for toxicological examinations and has to be recorded in the mahazar.

xvi) The samples required for histopathological/ chemical examination shall be collected by the FVO/AFVO/ registered Veterinarian and submitted to the concerned institution/laboratory for further analysis along with a Covering Letter. The covering letter should contain all particulars of the specimens, preservatives used, history of the case and the time of animal's death and that of necropsy.

xvi) After post mortem procedures the carcass has to be handed over back to the Investigation officer.

xvii) The post mortem mahazar shall be closed by Range Forest Officer

xviii) The field veterinarian should also submit a preliminary post-mortem examination report and mention, in case of a doubt of any disease as the cause of death, the disease suspected and the specific tests required.

xix) All possible measures should be taken for specimens to reach the laboratory in the shortest possible time after their collection.

xx) The post mortem mahazar along with a preliminary note of the FVO/ AFVO/ Govt. Veterinarian shall be submitted to the concerned DFO/WLW/DD with in 24 hours. Detailed report on the post mortem along with laboratory reports and its inference shall be submitted to the concerned DFO/WLW/DD within 2 weeks.

xxi) *The book titled "Techniques & Procedure for Post-Mortem of Elephants A Handbook for Veterinarians, Biologists &*

Elephant Managers", authored by Dr.Jacob V.Cheeran & Dr.N Diwakaran Nair, published by the Project Elephant & Central Zoo Authority, jointly, (First Edition 2003) may be referred, for guidance, in case of death of elephants.

xxiii) The Circle Heads has to submit he final report along with the post mortem report of the FVO/AFVO/ Govt. Veterinarian to the PCCF (WL) & CWW within 3 weeks from the date of initial report of the death of the targeted animal.

12. Death due to epidemics

In case of suspect of outburst of wildlife epidemics the matter shall immediately brought to the attention of the PCCF(WL) & CWW and to CFVO by the concerned Divisional Forest Officer/ Wildlife Wardens/ Deputy Directors. The FVO/AFVO shall to submit a preliminary report to CFVO and CFVO on verification shall ascertain the seriousness of the issue and shall submit a comprehensive state action plan to CWW within 48 hours. CFVO shall liaise with the Animal husbandry Department to Department for taking necessary preventive actions.

13. Deaths due to Poaching/ Unnatural death

i) In case the poaching or suspected unnatural death, WLW/DFO/DD shall ensure that an offence is registered under the relevant sections of W(P)Act, 1972 and the offence shall be properly investigated.

ii) The legal status of the land where the offence has been committed shall be ascertained and relevant documents collected

(j) Wildlife Warden/DFO shall conduct monthly review and ascertain the progress of the investigation, charging and trial of the case.

14. **Disposal of Carcass**

The carcass shall disposed of by burying/burning or may be left for natural predators,. The concerned DFOs/Wildlife Wardens/Deputy Directors shall take the final decision based on the recommendations of the FVO/AFVO/registered Veterinarian

15. **Maintenance of Mortality Register**

Each instance of mortality of any animal of the targeted species shall be recorded in the mortality register maintained at Range/Division/Circle Level with all relevant details. All the details, documents and progress of the mortality cases shall be uploaded in the online portal www.wildlife.hawkkeralaforest.in. The files of unnatural death / mortality of wildlife will be closed after considering the conclusive final report of Circle Heads which has to be submitted within four months from the date of incidence.

F. No. 2-23/2017 – PE
Government of India
Ministry of Environment, Forests & Climate Change
Project Elephant Division

Indira Paryavaran Bhawan,
Jor Bagh Road, New Delhi-110003

Dated 7rd June, 2020

To

The Principal Chief Conservator of Forests (WL)
& Chief Wildlife Warden,
Government of Kerala,
Forest Head Quarters,
Vanalakshmi,
Thiruvananthapuram.

Sub: A new channel report on spotting a wounded elephant near Karuvarakundu, Malappuram District, Kerala – reg.

Sir,

Please find enclosed a copy of the note published in the various news in print and visual media, it is learnt that one elephant was spotted with wounds in mouth and stomach near Karuvarakundu, Malappuram District, Kerala.

In this regard, it is requested to kindly submit a detailed action taken report to this Ministry at the earliest by email projectelephant.moef@gmail.com.

Yours faithfully,

Encls: As above.

(Dr. K. Muthamizh Selvan)
Scientist 'D' (Project Elephant)
Email id: km.selvan@gov.in
Telephone No. 011-24695067

വായിലും വയറ്റിലും വ്രണം; കാട്ടാനയ്ക്ക് ചികിത്സ നൽകി കാട്ടിലേക്ക് മടക്കി

സ്വന്തം ലേഖകൻ
JUNE 05, 2020 05:33 PM IST

സ്ഫോടകവസ്തു പൊട്ടിത്തെറിച്ച് ഗർഭിണിയായ കാട്ടാന ചരിഞ്ഞ സൈലൻറ്വാലി വനമേഖലയോട് ചേർന്ന് അവശനിലയിൽ കണ്ട കാട്ടാനക്ക് ചികിൽസ നൽകി കാട്ടിലേക്ക് അയച്ചു. മലപ്പുറം കരുവാരക്കുണ്ട് വനത്തിലാണ് വായിലും വയറ്റിലും നിറയെ വ്രണങ്ങളുമായി മോഴയാനയെ കണ്ടെത്തിയത്.

രണ്ടു ദിവസം മുമ്പാണ് കൽക്കുണ്ട് വനഭൂമിയോടു ചേർന്ന കൃഷിയിടത്തിൽ മണിക്കൂറുകളോളം ചലനമില്ലാതെ നിൽക്കുന്ന മോഴയാനയെ കണ്ടെത്തിയത്. വനം വകുപ്പിലെ വെറ്റിനറി സർജൻ ഡോ. അരുണിന്റെ നേതൃത്വത്തിലാണ് മയക്കുവെടി വച്ച ശേഷം നടത്തിയത്. ആന അവശയായിരുന്നു. വായിൽ മുറിവുകാരണം ആഴ്ചകളായി ഭക്ഷണം കഴിച്ചിട്ടില്ല. തുടർന്നും ആനയുടെ നീക്കങ്ങൾ നിരീക്ഷിക്കുന്നതിനായി രണ്ടു വനപാലകരെ പ്രദേശത്ത് നിയോഗിച്ചിട്ടുണ്ട്. 15 വയസ്സ് പ്രായമുള്ള മോഴയാനയാണിത്.

രാത്രി ആന സമീപ പ്രദേശങ്ങളിലെ വീടുകളിലേക്ക് എത്താതിരിക്കാനും പ്രത്യേക ജാഗ്രതാ നിർദേശമുണ്ട്. സി.സി.എഫിനൊപ്പം പാലക്കാട്, നിലമ്പൂർ, മണ്ണാർക്കാട് ഡി.എഫ്.ഒ മാരുടെ നേതൃത്വത്തിലാണ് ചികിൽസാ സംവിധാനം സജ്ജമാക്കിയത്.

SURENDRA KUMAR, IFS
PRINCIPAL CHIEF CONSERVATOR OF FORESTS (WILDLIFE) &
CHIEF WILDLIFE WARDEN
KERALA.

FOREST HEADQUARTERS,
"VANALAKSHMI"
Vazhuthacaud
Thiruvananthapuram-695 014.
☎ (Off): 0471 – 2321610
Fax: 0471 – 2320554
Mobile: 9447979009
E.mail:cww.for@kerala.gov.in

No.WL8-145008/2020 **Dated 10.06.2020**

To

Shri. Noyal Thomas IFS
Inspector General of Forests &
Director, Project Elephant
MoEF & CC, Govt. of India
(E.mail: igf.fp-mef@gov.in)

Sir,

Sub : Kerala Forest Department- Report regarding the death of the wild elephant due to explosion of cracker in Palakkad District, Kerala State -Reg

Ref : Letter F.No. 2-23/2017-PE dated 17.06.2020 of MoEF & CC.

Attention is invited to the subject cited above. A report regarding the events leading to the death of wild elephant in Palakkad District on 27.05.2020 is enclosed for kind information.

Yours faithfully,

Encl: As above.

Principal Chief Conservator of Forests (WL) &
Chief Wildlife Warden, Kerala

Report regarding the events leading to the death of wild elephant in Palakkad District on 27.05.2020

1. One injured female elephant was spotted by Forest officers on 23.05.2020 at a place called Ambalappara, falling under Mannarkkad Forest Division. The elephant was having injury in the mouth. After this, elephant went to the forests and again reappeared on 25.05.2020 at a place called Theyyamkundu nearly 1.00 km away from forest area. It was standing in river water. Forest officers tried to drive the elephant back to the forests but it was reluctant and eventually refused to go. On the same day, Assistant Forest Veterinary Officer from Thrissur inspected the elephant and suggested that giving medical treatment after tranquilization is not an option seeing the health condition of the elephant. Hence it was decided to bring 2 kumki elephants from Palakkad for pulling elephants from the river and for providing treatment. All arrangements were made and kumki elephants were brought to the spot but the injured elephant succumbed to injuries before anything could be done to it on 27.05.2020. Subsequently on 28.05.2020, postmortem was conducted and it was revealed that the elephant was pregnant for 2 months.

   i. As soon as information was received on 23rd May, about the straying of the elephant at Ambalappara, the forest officers visited the place. The elephant was having injury. But the elephant went back to the forest on its own the same day. On 25th May, the elephant again came out of forest and took refuge in Velliyar river near Ambalappara. The Forest officials, promptly arranged the assistance of Asst. Forest Veterinary Officer, Thrissur for examination. AFVO did not suggest treatment after tranquilization in view of the health condition of the elephant. He suggested treatment procedure with the help of two Kumki elephants. Kumki elephants reached the site on 27th May. But before anything to be done, the injured elephant succumbed to injuries.

   ii. Use of explosives for killing wild animals was not reported in the past form this division jurisdiction. However use of explosives for making noises for keeping the animals especially wild boars away were said to be practiced by farmers. No evidences for using meat of such killed animal / or its sale noticed.

   iii. No such order by State Government declaring any wild animal as vermin is available.

   iv. No past instances of elephant dying in similar circumstances reported from Mannarkkad Division. However one such incident has been noticed in Ambanar Forest Station area of Punalur Division on 09.04.2020. A wild elephant with physical ailments was spotted and treatment of the animal was started on

10.04.2020 itself in the guidance of Assistant Forest Veterinary Officer, Konni and Chief Forest Veterinary Officer. However the animal died on 11.04.2020. Observations from postmortem of the elephant were suggestive of possible explosion in the mouth. Therefore an offence – OR 01/2020 was booked in Ambanad Forest Station for unnatural death of the above elephant. Detailed investigation in the case has been conducted including in the following aspects.

A. The route of elephant herd for the last 14 days before the date of the death have been examined and plotted on a map.
B. The possible agricultural fields on the fingers of forest where the elephant herd passed during that period have been collected through intelligence work and information from the locals.
C. The places were shortlisted as Kottakkayam, Vellamthetty, Kaduvamoola, Padam and Olappara areas.
D. Combing operations were carried out all the above adjoining agricultural lands and forest fringe areas for evidence.
E. Based on intelligence network and combing operations, suspects in the case were shortlisted and detailed whereabouts and activities of them for the last two weeks before the death of the animal were studied.
F. Meanwhile the assistance from Police Department was requested and superintendant of Police, Kollam ordered the DySP, Punalur to assist the forest department for investigation. One meeting was conducted on 08.06.2020 on the Chamber of Divisional Forest Officer, Punalur for the planning of the detailed investigation of the above case.
G. On 09.06.2020 six suspects in the case were taken custody by the Range Forest Officer, Pathanapuram. Country made gun, gunpowder and other items used for making explosives, animal traps and wild animal fast (suspected to be from python) were also recovered from the suspects and collection of evidence and interrogation of the suspects are still continuing. Further progress in the case will be submitted soon.

Progress of Investigation in death of pregnant wild elephant by using explosives

An O.R. 10/2020 was booked in Thiruvazhamkunnu Forest Station for unnatural death of elephant against unknown offenders. Since then, Forest Department has been making earnest efforts to nab the culprits. Success came on 05.06.2020 when one of the accused Wilson, S/o. Babu, Kalayil was arrested. Efforts are being made to nab another two father-son duo Abdul Kareem @ Kunjani and Riyasudeen @ Manu, who are number 1 and number 2 accused in this case.

After the incidence, Kerala Forest Department launched massive combing operation throughout the State on 4th to 8th June 2020, in 320 locations throughout the state which approximately 1500 forest staff participated. As a result, 5 cases were registered; 13 guns and 2 vehicles were seized and 20 persons were arrested.

Abdul Kareem @ Kunjani and Riyasudeen @ Manu, S/o. Kunjani used to hunt wild boar for meat and they are involved in many poaching cases in adjoining forest. They are also expert in making "panni padakkam" (cracker used for killing wild boar) and using them for poaching of wild boar. In the instant case, Kareem has placed the "panni padakkam" in coconut with intention to poach wild boar for meat. But, unfortunately, elephant took the bait and got injured on 12th May. After that they tried to drive the elephant to forests. However, Forest Department spotted the elephant on 23rd May at Ambalappara as stated above.

2. After the incident, Kerala Forest Department launched massive combing operation throughout the State on 4th to 8th June 2020, in 320 locations throughout the state which approximately 1500 forest staff participated. As a result, 5 cases were registered; 13 guns and 2 vehicles were seized and 20 persons were arrested.

The number of wild animals killed due to before snaring, traps, electric wires, explosives, poisoning and other means, and the details of legal action taken in the last three years is given below:

Year	snaring	Traps	Electric Wires (Electrocution)	Explosives	Poisoning	Shooting	Other means
2018-19	6	18	2	2	9	5	23
2019-20	11	18	4	2	3	5	35
2020-21 (till now)	6	3	2	2	0	4	13

Legal action taken against the offenders in this regard.

Year	No. of cases booked	No. of offenders	No. of offenders arrested
2018-19	62	135	130
2019-20	71	164	144
2020-21	24	53	44
Total	**157**	**352**	**318**

3. Liaison with parallel departments: Police, Excise, Fire force, Tribal, Civil Supplies and Health Departments are very much helpful in having joint programmes by having medical

camps, joint ganja and illicit brewing raids, education support and investigation of forest offences. Interstate co-ordination and joint patrolling with the help of forest departments of neighboring States are also conducted in border areas.

4. Compensation to the victims of wildlife attack is being given as per the Kerala Rules for Payment of Compensation to Victims of Wildlife Attack, 1980. Revised rates for payment of compensation to the victims of wild animal attack are published in GO (MS) No. 17/2018/Forest dated 05.04.2018. The present rate of compensation given for the loss of crop and human life due to wildlife attack including elephant are as follows:

Sl.No.	Details of loss to life and property/ injury	Amount of compensation (given earlier)	Amount of compensation (present rate)
1.	Death	Rs.5.00 lakhs	Rs.10.00 lakhs
2.	Death due to snake bite outside forest	Rs.1.00 lakh	Rs.2.00 lakh
3.	Permanent disability	Maximum Rs.75000/-	Maximum Rs.2.00 lakh
4.	Injury	Maximum Rs.75000/- (People belonging to SC/ST community will be provided full expense for the treatment based on the medical certificate of a Medical Officer)	Maximum Rs.1.00 lakh (People belonging to SC/ST community will be provided full expense for the treatment based on the medical certificate of a Medical Officer)
5.	Crop loss, cattle loss, damage to house	100% of the loss (Limited to Rs.75,000)	100% of the loss (Limited to Rs.1.00 lakh

Details of compensation paid by Forest Department in the last three years for damage of life and property by wild animals is given below:

Type of Damage	2016-17	2017-18	2018-19
	Compensation Paid (In Rs)	Compensation Paid (In Rs)	Compensation Paid (In Rs)
Death	2,39,75,360	1,98,21,250	2,42,66,000
Injury	2,27,34,585	2,70,75,366	2,58,42,862
Loss of cattle	76,39,474	63,27,110	88,38,825
Crop loss	4,20,40,133	4,86,44,565	5,25,55,467
Total	**9,63,89,552/-**	**10,18,68,291/-**	**11,15,03,154/-**

5. Kerala Forest Department has formulated detailed standard operating procedure for dealing with death of Schedule I and Schedule II (Part II) species other than tiger leopard and marine animals. The SOP covers aspects like reporting mortality, identification of species, on site actions to be taken, postmortem of the animal, actions to be taken on death due to poaching, disposal of carcass and maintenance of mortality register. The standard operating procedure for dealing with Human elephant conflict prepared by Project Elephant Division of MoEF & CC and WII are followed for rescue and rehabilitation of wild elephants. Kerala Forest Department is Maintaining Six Kumki Elephant Squads for mitigating Human-Elephant conflict.
6. After the incident, Kerala Forest Department launched massive combing operation throughout the State on 4th to 8th June 2020, in 320 locations throughout the state which approximately 1500 forest staff participated. As a result, 5 cases were registered; 13 guns and 2 vehicles were seized and 20 persons were arrested. Jana Jagratha Samithis were constituted in 204 Panchayaths in the forest fringes for ensuring public participation, awareness, co-operation and information gathering. The committee is entrusted to look after man-animal conflicts reporting in their jurisdiction and to suggest effective preventive measures. The committee is also entrusted to provide awareness among the locals regarding man-animal conflict.
7. & 8 : There is no strategic plan existing at present in this regard. The Department interact with media through Public Relation Wing and Twitter (@ForestKerala).

PCCF (WL) & CWW, Kerala

नोयल थॉमस
NOYAL THOMAS

सत्यमेव जयते

वन महानिरीक्षक
भारत सरकार
पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
INSPECTOR GENERAL OF FORESTS
GOVERNMENT OF INDIA
MINISTRY OF ENVIRONMENT, FOREST AND
CLIMATE CHANGE

D. No. 13-1/2015-PE

Dated 10th June, 2020

Dear Sirs,

I am writing this letter to invite to your kind attention to my earlier D.O. letter dated 26th December, 2019 regarding the death of elephants and humans due to increased human-elephant conflicts in the country. However, it is seen that this Ministry has not received the real time information on death of human beings and elephants even after repeated requests. It is rather undesirable to get information from the various print and media. The recent incidents of killing of elephants using explosives and poisoning have further highlighted the seriousness of the HEC issues. It is also requested that necessary preventive measures including strict vigilance are taken to prevent such unfortunate incidents in future.

Hence CWLW's are once again requested to provide the real time information on death of elephants and human beings on the same day, as and when such incidents are reported from the field.

Thanking you,

Yours sincerely,

10/6

(Noyal Thomas)

To

The Principal Chief Conservator of Forest (PCCF) & Chief Wildlife Warden (CWW), All Elephant Range States.

पृथ्वी विंग, छठा तल, इंदिरा पर्यावरण भवन, जोर बाग रोड़, नई दिल्ली-110 003, फोन : (011) 24695249, फैक्स : (011) 24695364

Prithvi Wing,6th Floor, Indira Paryavaran Bhawan, Jor Bagh Road, New Delhi-110 003, Tel. : 011-24695249, Fax : 011-24695364
E-mail : igf.fp-mef@gov.in, igpe-mef@nic.in

Guidelines for Management of Human Elephant Conflicts

INTRODUCTION

1. Definitions

Human elephant conflict: The Elephant Task Force (ETF) defines human-elephant conflict (HEC) as the adverse impact people and elephants have on each other

Hard boundary: The Elephant Task Force (ETF) defines hard boundary as distinct boundaries between human use areas and elephant habitat areas

Diffused boundary: The ETF defines diffused boundary as where the boundary between human use and elephant habitat areas is not clear, especially under conditions of complex land use mosaics

Deterrent measure: These are measures used to prevent entry of elephant in human use areas such as villages, agricultural fields and urban areas etc.

Repellent measure: These are techniques used to drive away elephants when they have already entered human use area

Obligate crop raiding: The ETF defines obligate crop raiding as situation where elephants are forced to raid crops due to insufficient forage resources in their natural habitat.

Opportunistic crop raiding: The ETF defines opportunistic crop raiding as situation where elephants raid crops due to their availability and attractiveness rather than shortage of natural forage resources in forests.

Kunki: Captive trained elephants used for elephant drive and capture operations

Seasonal migration of elephants: Elephants are migratory species and generally follow the same migratory routes annually depending on ecological conditions. Asian elephants in deciduous forests of southern India, with numerous water sources, reported elephant migration to extend between 20 and 50 km.

2. Background

Human elephant conflict (HEC) has emerged as one of the most challenging problems for elephant management and conservation in recent times. It creates considerable economic hardships for the affected farmers. There are several regions that experience crop damage by elephant year after year. Human deaths due to encounters with elephants are also an issue of serious concern. It is estimated that every year approximately 400 persons are killed by elephants across the country and more than 100 elephants are also killed annually, mostly as retaliatory killings by people.

HEC has proved to be quite intractable and managing HEC is a big problem for forest officers and frontline staff, who have to deal with it, often on a regular basis. Often they have to face the ire of the affected farmers, especially when there is a human death or severe injury. There are innumerable incidents when frontline staffs have faced the ire of affected people due to HEC, sometimes at risk to their personal safety.

Considering these factors management of HEC is one of the most important issues that need to be addressed in planned way for conservation of elephants.

The main types of HEC are:

i. Human injury or deaths in encounters with elephants
ii. Damage to standing agricultural and plantation crops
iii. Damage to harvested and stored agricultural crops, often accompanied by damage to the storage facility
iv. Damage to property such as sheds, houses, pipelines and irrigation facilities.
v. Death/ injury to cattle and other domestic animals.
vi. Injury and death of elephants mostly due to retaliatory attacks by humans due to electrocution by power lines or poisoning
vii. Death of elephants due to train collisions
viii. The development activities and houses in movement path of elephants (especially labour lines in tea gardens) are also causes of encounter between human and elephants leading to HEC

The single most important reason, elephants enter human use areas are to feed on agricultural and plantation crops. The second reason is for water, with damage to property and human life arising as incidental damage, from trampling or some feeding on crops by the elephants.

The ETF defines describes obligate and opportunistic crop raiding. In many circumstances it is difficult to identify the type of crop raiding. Therefore in these guidelines the approach is taken of symptomatic treatment of HEC rather than trying to identify the cause of crop raiding. The issue of habitat improvement to meet the elephants forage and spatial needs within forest areas has been addressed in detail in the ETF report.

Retaliatory or accidental killing of elephants is the other face of HEC. The affected community or individuals sometimes retaliate against elephants, either in revenge, or to prevent further attacks by elephants. Practices adopted for retaliatory killings include shooting the elephant or electrocution (sometimes by accident as these are often meant to deter other wildlife such as wild pig). Therefore elephants are also the victims of HEC.

Complete solutions to HEC probably do not exist. However, good HEC management and mitigation practices can go a long way to minimize the adverse impacts of HEC on societies.

3. Factors Influencing Intensity of HEC

HEC intensity is highly variable, ranging from very occasional to chronic. Density of elephant populations obviously plays an important role in HEC intensity. The nature of the interface between human areas and elephant habitat also determines conflict intensity, where an irregular and diffuse boundary with a long perimeter is thought to increase intensity of conflict. Highly fragmented elephant habitat interspersed with human use areas is also likely to increase conflict frequency and intensity. In some cases dispersing herds wander into extensive agricultural habitats with hardly any forest and cause high intensity of conflict, at least in the initial years. In some regions the agricultural damage is lower and the conflict is mainly due to loss of human life. Train-elephant collisions occur frequently in Bengal, Assam, Odisha, Kerala and Tamilnadu, where railway tracks pass through forests with sizeable elephant populations. The HEC management strategy also needs to be adjusted to suit the particular situation and both short and long term measures should be adopted based on the field situation to mitigate HEC.

4. Organization of these guidelines

These guidelines are written in three parts - an introduction, an overview of current HEC management practices, and prescribed guidelines to minimize and mitigate conflict.

OVERVIEW OF CURRENT HEC MANAGEMENT PRACTICES

5. Installation of Barriers

Barriers are used for preventing elephant exit outside reserve forest areas or entry into cultivated fields or human inhabited areas. Barriers may be used to guide elephants through funneling to over-bridges or under-passes set up for them to negotiate railway lines, highways or canals safely. The principal types of barriers used against elephants:

- Elephant proof trenches (EPT)
- Solar-powered high voltage electric fences
- Rubble walls
- Other types of fences made from railway tracks, steel channels and bars etc.

There are different strategies to install barriers.

i. Construction of barriers **around forest areas** to keep elephant inside the forest.
ii. Sometimes barriers are constructed **across the landscape**, between two states, two districts and even between two countries.
iii. Barriers can be constructed **around the settlement** to be protected such as a village or an enclave

Given below is a review of effectiveness of barriers for managing HEC.

Barriers achieve only partial success at best. Elephants often find their way around barriers, over or through barriers and gain entry into the desired area.

Though it is commonly used, Strategy (i) is not useful or advisable around small forest blocks because such forests cannot provide all the space and food requirements of elephant clans or even bulls. It may be moderately useful around large forest blocks that are capable of providing the resource requirements of elephant clans. They may be effective in protecting adjacent inhabitations. However it is nearly impossible to completely encircle forest blocks. Hence, barriers at the edge of forest blocks can at best be installed as a local protection measure. Barriers are more likely to be effective in case of hard boundaries where there is a clear boundary between elephant habitat and human use landscape.

If inappropriately placed, barriers have the disadvantage that they can block or alter traditional migration routes of elephants and prevent genetic interchange between populations. They may therefore, at times, be contrary to the scientific principles of wildlife management. Therefore, large scale barriers need careful study before implementation. They need to be planned at a landscape level taking into account the presence and seasonal movement patterns of elephant clans.

Strategy (ii) is practically useless because it is impossible to create effective barriers at landscape level. It is also futile to put up barriers between States/ Countries (or other political/administrative boundaries) because elephants need to move across ecological landscapes and not be confined to administrative units.

Strategy (iii) is most effective for protection of crops from elephants, but it can be used only in specific situations wherever there is a compact area that needs to be protected. Barriers are moderately effective if used to protect small enclaves. They are not so effective if used around large enclaves. In a largely agricultural landscape it becomes difficult to create effective barriers.

Involvement of the local community or the stakeholder is most important for effectiveness of barriers. The stakeholders must be actively involved in installation and the maintenance of the barrier. The process needs to be inclusive, and *Gram-*

sabha may be consulted in such discussions. Otherwise the barriers, exposed as they are to the elements, soon deteriorate and become ineffective. This is true for all types of barriers. In many states stakeholder involvement has proved ineffective because of poor interaction between the community and Forest Department.

Of the various barrier types, elephant proof trenches (EPT) require high investment and are difficult to maintain. They are prone to soil erosion, especially along slopes in high rainfall regions. The recommended design of EPTs consists of segments separated by walls – known as septa – to prevent water flow. This precaution is sometimes overlooked causing severe soil erosion. EPTs should be strongly discouraged in regions with rainfall higher than about 1500-2000 mm per annum.

Solar electric fences require lower investment than EPTs. However maintenance of solar fences by the community is generally poor. Solar fences work best when installed by institutions and individuals. Elephants are known to cross solar fences by breaking those using tusks or branches of trees.

Nowadays strong barriers are being created using steel channels, railway tracks and concrete walls. Such barriers may be successful in stopping elephants but they need high investment. They may be useful over small distances at critical locations. At a larger scale it is difficult to justify the cost.

Spikes are also being installed on the barriers as an additional deterrent measure. In one design a concrete strip is erected at ground level all around the area to be protected and metal spikes are inserted in the barrier. If an elephant steps on it, its feet pads will be seriously injured. In another design spikes are created on concrete walls or strong concrete walls. Such spikes are dangerous and may seriously injure elephants, wild animals, livestock and humans.

6. Anti Depredation Squads (ADS)

Anti-depredation squads are commonly used in North Bengal, Assam, Odisha and Chhattisgarh where large groups of elephants raid agricultural crops. ADS are equipped with a vehicle, torch, siren, fire crackers and sometimes even double barrel guns, especially in Sukhna - Mahananda region of North Bengal. The presence of ADS gives the community a sense of reassurance that the government is protecting them and their property. ADS is effective if it is managed by technically competent persons, trained mahouts and kunki elephants. It requires high level of coordination between divisions. However, the manner in which it is often implemented operations of ADS is not systematic and there is a lack of standard operating procedures. There is lot of chaos in activities of ADS, with participation of local mobs which reduces their effectiveness. Shots are sometimes fired in the

ground near the elephants to keep them moving towards the forests. Elephants, including calves, are also poked with iron spears to drive them.

7. Elephant Drives

Elephant drives are often carried out by the Forest Department. Often the aim is to drive the elephant herd out of their range so that it becomes someone else's problem. Another objective is to drive it towards the forest. Sometimes cruel scaring tactics are used to drive the elephants. In one recent case a young calf got permanently separated from the mother, and later died of stress and starvation.

In some states elephant drives are the mainstay of conflict mitigation. Herds of over 100 elephants are regularly driven towards the forests. The elephants take shelter in the forests and return to feed on crops when people go away. This to and fro movement causes stress for the elephants. They become agitated when surrounded by people. In such cases they often charge at people and the conflict aggravates.

8. Kunki Elephants

Kunki elephants are used in Assam, West Bengal, Karnataka and Tamil Nadu. Odisha FD is also building up a kunki squad. They are found to be fairly effective in driving away elephants from villages, for monitoring/capturing/ tranquilising/ translocating/ training/ hunting of problem elephants. Kunkis are generally used in unmanageable situations as a last resort. However there is high cost involved of hiring kunkis and feeding them. Sometimes, kunki elephants may not be able to reach the conflict site quickly. Moreover there are few, well-trained kunki elephants available nowadays. However, training should be imparted to elephants and mahouts to develop their skills for use during HEC situations.

9. Commonly used repellent methods

A variety of local repellant methods are used by farmers.

<u>Loud noises and crackers</u>

This is the most common technique used because it is simple and can be used by everyone. Typically these consist of drum beating, shouting, and bursting crackers. These measures are sometimes effective and at other times ineffective, depending on the habituation of the elephants. Male elephants are generally more resistant to such measures. Sometimes presence of a large crowd is most effective in driving away elephants. However, in certain case e.g. in urban settings and congested places crowd management becomes biggest challenge and may lead to injury to people.

<u>Other repellent methods</u>

Other repellent methods such as electric torch, kerosene torch (mashāl) and swinging fireball are used. These are all moderately effective if done systematically.

10. New repellent methods

Bee sound

Elephants are known to be afraid of bees. Bee sound played has been used as a repellent method in Africa and found to be very effective, especially if it is backed by beehive fences.

Carnivore sounds

Playback calls of predators such the tiger or even smaller carnivores such as leopards may evoke negative responses in elephants and keep them from entering agricultural areas.

Drones

Drones have been recently used in Africa to drive away elephants over long distances, and found to be very effective. Elephants are scared of drones and quickly run away from the site when buzzed by a drone.

Drones use the same principal as the bee fences where the sound of the drone is perceived as swarm of bees and elephants beat a hasty retreat. It is a good option to implement if the resources for drones are available. However drones are difficult to fly at night due to limited visibility. Permission from various authorities is also required to use drones, particularly near international borders. Also drones may be less useful in heavily populated areas because of the risk of trampling of crops and people by elephants.

11. Deterrent Methods

Trip alarm

Trip alarm consists of a string stretched across entry points of elephants and connected to a switch of a battery-operated electric bell. The alarm bell rings when elephants cross the trip. This gives sufficient warning to the community to come to the point and drive away elephants. Trip alarms are very effective in situations when entry points of elephants are known.

Sensor based alarm system

Sensor based alarm system could be tried to detect animals in or near village/agriculture land or even to detect elephant near railway tracks. These are solar powered infra rayed system and could be even fitted with camera and can alert villagers/ driving squad when elephants are detected close to human settlement or agriculture land through SMS/lights/sound, etc. The PRT and RRT could then come in action to drive the elephant. This will help from physically guarding the agriculture field by villagers.

Night Guarding

Night guarding is a traditional way of protecting crops against wild animals but it is falling into disuse because of disintegration of the traditional joint family system in rural India and increasing labour costs. Use of old and physically challenged persons for night guarding is known to be a major cause of human mortalities and injuries by elephants

Therefore, community guarding is one of the most effective ways of protecting crops. Farmers should sleep on watch towers created in their fields or on machans (platforms constructed on trees). This should be a community activity. It needs to be done only when elephants are known to be active in the area for crop raiding. It is more effective when combined with trip alarms.

Chilli-based methods

Chilli is known to have an irritating effect on olfactory nerves of elephants. Hence chilli-based methods are found to effective against elephants. It may also act as a psychological barrier. Chilly as a repellent can be used in the form of chilli smoke, chilli rope, chilli curtain and chilli bricks. Chilli ropes were found to be more effective against elephant family groups than bulls, and in drier regions as compared to high rainfall regions (Chelliah et al. 2010, Current Science); thus it is more appropriate to use this deterrent for only a few weeks prior to harvest of cereal crops to minimize the chances of elephants being conditioned to recognize this as harmless.

Chilli smoke is one of the effective methods as elephants are known to sneeze and cough while inhaling the smoke. Elephants change their paths if they come across chilli smoke. Chilli smoke can be generated in many ways, limited only by human ingenuity. It can be generated by incorporating chilli in slow burning grass bundles or dung cake, sprinkling on slow burning embers and camp fires.

Beehive fences

Elephants are known to be afraid of bees. In Africa bee hive fences have been found to effective in deterring elephants. A series of bee hives is created at short intervals along fences at the boundary of the enclave. The bee hives are connected to the fence. The bee hive model commonly used is the top bar model. When elephants try to enter the bees get disturbed and start buzzing around the elephant thus driving away the elephants. It is also said that if elephants encounter bees, they will alert other members of their herd through low frequency sounds (inaudible to humans). Farmers get additional benefit of income from honey and better pollination.

VHF pairing and setting up direct hotline: For avoiding rail collisions, VHF pairing with railway authorities, round the clock deployment of forest staff in control rooms of DRMs of Railways and erection watch tower and temporary sheds has to be done in strategic locations. Measures should be taken to set up direct hotlines to contact with railway authorities, where passage of elephants across railway tracks is regular.

Alternate cropping:

Alternate cropping with non-edible crops crops like chilli, citrus not consumed by elephants could be grown in forest fringes as well as areas near settlements in forest fringes may deter elephants from reaching and raiding the crop fields. Some forms of vegetative barriers may be effective.

Other methods

Elephants are known to be afraid of any unfamiliar sight, sound or smell. Therefore various inventive methods can be used that create unfamiliar visual, aural and olfactory effects can be effective in repelling and deterring elephants. The key is to keep altering the methods to prevent familiarization by the elephant.

12. Community Based Conflict Management (CBCM)

The main concept is that the community should take responsibility for crop protection with emphasis on low cost deterrent methods such as trip alarms and chilli based methods such as chilli-smoke and chilli-rope. There is strong emphasis on night guarding. In case elephants enter they are driven away by some of the repellant methods described above. In Africa studies have shown that there is an 80% reduction in crop damage where crops are protected by the community. The strategy has been found to be effective where it is implemented in Africa and India. Sometimes individual farmers proactively protect their crops but CBCM works best at the community level when all farmers come together to protect their crops. The challenge is to get communities to implement it because it needs additional work from their side and they prefer to let the Forest Department handle it. Some traditional communities are not afraid of elephants and drive away elephants effectively. When they encounter such communities, elephants prefer to change their path and go to other areas.

A large extent of elephant habitat in the north-eastern India is managed directly by the communities and CBCM in such areas is not a matter of choice but an imperative. Capacity building of the autonomous councils and Local Bodies in these areas should be carried out in the same way as that of the SFDs.

There is a lot of scope for involving communities in planning, constructing and maintaining barriers; recruiting night guards and labour for ADS / Rapid Response Teams; and verification of claims for *ex-gratia* relief. Insurance cover should be provided to the community members involved in HEC management. Selected community leaders can be recognized as Honorary Wildlife Wardens and some limited powers under Section 11 of the WPA-1972 (e.g. capturing of macaques, hunting of wild boars and blue bulls) can be delegated to them.

Logic of CBCM

The Forest Department has limited number of staff that can participate in HEC management. If an elephant enters a village the manpower available in the village is far more than the Forest Department can provide. By empowering the community and capacity building it is possible to have a much stronger manpower force for protection of crops from elephants. In many states shortage of staff is a major hurdle in HEC management and for working in cooperation with the community.

Due to natural inertia, acceptance of CBCM by the community is slow. Acceptance and implementation of CBCM is better when it is supported by the Forest Department. CBCM should be implemented through JFM committees because this is the accepted institutional mechanism for cooperation between the community and the Forest Department. An active and vigorous JFM movement is a prerequisite for effective cooperation between the community and Forest Department for CBCM.

13. Ex-gratia payment

In recent years ex-gratia for damage to crops compensation has become an important mechanism to redress grievance and assuage feelings of community affected by human elephant conflict.

Ex-gratia is paid in case of crop damage and, in some states, property damage. The damage is reviewed by an authorized officer from the Forest Department or a committee consisting of representatives of Revenue, Agriculture and Animal Husbandry Departments and Gram Panchayat members. A compensation case is prepared and submitted to higher authorities for sanctioning ex-gratia according to rates prescribed by State Government GRs or GOs.

In case of injuries to human beings the affected person is provided treatment by the Forest Department free of charge and may be given an additional ex-gratia. In case of human deaths the Forest Department provides ex gratia payment to next of kin of the deceased at State Government approved rates.

This system of ex-gratia has helped to assuage the feelings of the persons affected in the case.

The main criticisms of these schemes, especially by the farmers, have been as follows:

i. The ex-gratia rates provided in case of crop damage are insufficient
ii. The ex-gratia process is too lengthy and time consuming so many affected persons prefer not to file complaints
iii. The ex-gratia is disbursed too late

There is some merit in all these points. Ex-gratia rates are indeed low in many states. In some states, because of shortage of funds, only some farmers are given ex-gratia. On the other hand, studies have shown that farmers often perceive the crop damage to be higher than actual, so their expectations are also higher. In some states the excessively high ex-gratia rate can give rise to fraud claims.

In some states ex-gratia is paid very late while it is very efficient in other states. In Karnataka, in some divisions, the ex-gratia is given within two weeks. Karnataka is in process of incorporating crop damage ex-gratia in its HULI software/ app that will enable much faster resolution of ex-gratia cases.

A novel method of community-assessed ex-gratia for crop damage that is resistant to cheating is worth trying on a pilot scale in some regions (Watve et al. 2016, Global Ecology and Conservation).

The ex-gratia rate for human deaths due to elephants varies from state to state. The rate provided by Government of India is Rs. 2 lakhs. The maximum ex-gratia, in Maharashtra State, is Rs. 8 lakhs. The Gajah (Elephant Task Force) report has recommended that ex-gratia in case of human death should be at least Rs. 5 lakhs.

As ex-gratia support for crop loss by elephants, the farmers could be provided with "*grain for grain*". This is aimed at providing grain as a replacement for the crops lost by the farmers due to elephant depredation as an alternative to the scheme of providing monetary relief as ex-gratia support to the farmers. The scheme also helps to promote food security (money not being used for other purpose) to the affected people with the idea of providing grain to compensate for lost grain aiming to prevent retaliatory attacks.

PROPOSED STRATEGY

The HEC management practices often have a short term objective of crisis management. However for effective management of HEC one needs to have a long term strategy. The guidelines presented herein are presented specifically for managing human elephant conflict. It needs to be dovetailed with other strategies, such as landscape habitat planning, protection of corridors, habitat management,

consolidating elephant habitat, managing elephant population through reproductive control* measures as well as limited capture where essential for a more comprehensive solution.

14. Community Involvement and Empowerment in HEC management

14.1 Advantages of community involvement in managing HEC

The Forest Department frontline staff is often burdened with several responsibilities. They are unable to devote sufficient time and attention to managing HEC. Neither do they have sufficient manpower to counter HEC on their own. Involvement of the community in HEC management is known as community based forest management (CBCM). CBCM is a means of empowering the community to share responsibility of HEC management with the Forest Department. The advantages of CBCM are:

- The community members are already present at the site so they are capable of more rapid response
- They have a vital stake in protecting the crops and property
- The community has far more manpower than does the Forest Department
- They often have detailed knowledge of the village layout compared to Forest Department

In the beginning it may be difficult to involve the community in HEC management. There is commonly reluctance on part of the community to participate in HEC mitigation activities. This stems from the community attitude that HEC management is the Government's responsibility. At the outset this attitude needs to be changed in order to gain participation of the community in HEC mitigation. The community needs to be told that HEC management is a partnership between the community and the Forest Department, and the community stands to benefit considerably from protecting their own crops. Building confidence and capacity of the community is the next step to achieve success in CBCM.

In some states communities are already involved informally in HEC mitigation. However in most states it is the Forest Department that manages HEC. It is suggested that a CBCM program should be implemented through JFM/ EDC committees, wherever they exist, or through the Gram Sabhas, where there are no JFM committees. The Forest Department should play a strong role in hand holding and capacity building. Good relations between the Forest Department and the Community are essential for promoting CBCM.

Other stakeholders should also be involved in HEC management according to the local situation. Some of these are tea estate owners, coffee estate owners and local institutions.

* At present the Hon'ble Supreme Court of India has barred State Forest Departments to take up control of elephant population through immuno-contraception methods under WP (C) 107 of 2013 Shakti Prasad Naik Vs Government of India and others. The Ministry of Environment Forests and Climate Change and West Bengal Forest Department have filed affidavit in the Supreme Court of India to permit elephant population through immuno-contraception methods. The case has not come up for hearing till date.

14.2 Hierarchy of HEC mitigation measures

The commonly accepted hierarchy of mitigating any kind of impact is:

Avoid > Minimize > Restore

Analogous to this strategy, in case of HEC mitigation, the recommended hierarchy of mitigation measures is:

Deterrent measures > Early warning systems > Repellent measures > Compensation

The first priority should be to prevent elephants from entering agricultural fields. To achieve this, deterrent measures should be adopted. If deterrent measures fail, early warning systems will give alarm of elephant presence and enable the community to drive away the elephants. In spite of this if elephants enter agricultural fields, then repellent measures should be used as a last resort to drive away elephants. If the measures are not successful and elephants damage crops, compensation should be paid to the affected farmers.

14.3 Strengthening capacity of communities

Capacity of communities should be strengthened by providing them required support in terms of equipment and material. Within each JFM committee crop guarding squads should be set up for crop guarding and elephant scaring. The crop guarding squads should function as a unit.

The most basic equipment for community guarding of crops is an electric torch. Powerful LED torches are available cheaply nowadays. All communities should be provided such LED torches for anti-depredation work. For this purpose yardsticks should be decided such as one torch for a certain number of households.

Other material may be provided for crop protection such as firecrackers.

14.4 CBCM techniques

Deterrent techniques

Communities should be trained in deterrent techniques for protection of crops from elephants and preventing elephants from entering crop fields. Chilli-based deterrent techniques such as chilli rope and chilli smoke have been found to be very useful in certain situations. Techniques based on sound of humming bees and beehive fences have been found to be useful in Africa and need to be tried in India.

Early warning techniques

Night guarding on watch towers, *machāns*, or any tall structure is one of the most effective early warning and deterrent techniques. Trip alarm has been found to be effective to give early warning of elephant arrival. Night guarding supported by trip alarms is very effective in deterring elephants.

Bulk SMS alerts

In Valparai Plateau in Tamilnadu SMS alerts have been found to be useful in informing people of elephant presence in the area. This system has helped to reduce accidental encounters between elephants and people and has reduced mortalities of people in the area (The SMS alert system is useful in specific locations where there is a problem of regular encounters with elephants). In areas where there is crop damage the farmers require support in preventing elephant entry in their crop field. Also SMS alert requires investment in technology therefore the farmers is dependent on either the Forest Department or an NGO.

SMS alerts have also been used successfully in west Bengal to alert railway authorities about presence of elephants on railway tracks to minimise death of elephants due to train hits.

Repellant techniques

Crackers and drum beating are the most common repellent measures but their effectiveness is low in most situations because elephants have become habituated to them. Some innovative local repellent techniques, such as swinging fireball, have been found to be moderately effective for driving away elephants.

Communities are resistant to adopting new methods. NGOs should be involved in motivating and training the community in different crop protection techniques.

A manual should be created for deterrent techniques and repellent techniques of crop guarding by community. This manual, translated into local language, should be widely distributed in the Forest Department and to other stakeholders.

Community crop guarding techniques are to be situation specific. All techniques may not be applicable to each situation. Techniques should be identified that are useful

for specific situations. Simplified booklets in local language that are useful for the local situation should be distributed to the community.

14.5 Dissemination

Training workshops should be conducted for Forest Department frontline staff in community crop guarding techniques. The frontline staff in turn should train the community in these crop guarding techniques. Literature and training manuals should be made available in community crop guarding techniques to the frontline staff and community.

15. Implementation of Barriers

15.1 General guidelines on barriers

Barriers should not be created across the landscape or along administrative boundaries. Such barriers are useless because they invariably have gaps such as roads, streams and rivers that elephants can use to pass through.

It is found that barriers are most effective when they are used to keep elephants out of small blocks of land such as a small hamlet or an institution. They are less effective when used around large blocks of land, such as large villages.

15.2 Barriers on forest boundary

Barriers should not be created around small forest blocks of a few square kilometers in size because they are not very effective.

Barriers may be created on larger forest boundary if there is severe human elephant conflict. In such cases barriers should be created only if the following conditions are satisfied:

- The boundary is “hard”, i.e. there is a clear and sharp demarcation between forest and human landscape.
- The boundary is fairly straight without much convolution.
- The boundary should not be broken by roads, river or large stream because such openings will leave gaps for elephants to move in and out, thereby defeating the purpose of creating the barrier.
- The local community should not have an interest in entering the forest for grazing their cattle or collecting firewood because they will create openings or crossings that will defeat the purpose of creating the barrier. In some cases appropriate gates may be tried.

Barriers on forest boundary, if created, should be used only as a local measure for controlling local HEC. Barriers should never be created around the entire forest

block if this is small, because this will confine the elephant population and compromise their long term genetic viability.

If barriers are to be created a map should be prepared showing location of elephant groups, seasonal migration patterns of elephants and locations of elephant corridors. The map should show location of proposed elephant barriers. A proposal should be prepared with all information and submitted to the Project Elephant Director of the state. Who will take a decision about it after reviewing the entire information and take the advice of elephant experts when needed.

15.3 Types of barriers

Elephant proof trenches should be installed with discretion only where the situation demands. They should not be constructed in sloping or hilly terrain or in regions with high rainfall (1500-2000 mm per annum and above). Technical specifications of EPTs recommend internal walls, known as *septa*, of 10-20 cm width, at intervals of 10 to 20 metres, to divide it into segments so that water does not flow along the EPT and cause soil erosion. These specifications should be adhered to.

Solar (high voltage) electric fences should be installed only under specific situations such as to protect small enclaves, institutions and individual farms. Community involvement is essential for maintenance of solar fences. Written agreement should be made with the community that they will take responsibility for its maintenance. Communities should be given monetary support for maintenance of fences provided they take responsibility of maintenance.

Barriers with sharp spikes that have potential to injure elephants, wildlife, livestock and humans should be strongly discouraged.

16. Anti-depredation squads (ADS)

Anti-depredation squads (ADS) are an essential component of HEC management in some states such as West Bengal and Assam. In these states groups of elephants congregate and enter human use areas in large numbers. In such situations the local community needs the support of the ADS to protect their crops and property.

ADS should be well equipped and the State Government should provide sufficient funds to ensure this. Each ADS should be supported by at least two kunki elephants. However, the use of guns by ADS needs to be strictly controlled. ADS should also not be allowed to use spears and sharp instruments.

ADS should be composed of trained staff with technical knowledge of elephant behaviour and elephant management techniques. ADS should work in a planned manner. At the beginning of every season training sessions should be conducted for

ADS. Trial runs and mock operations should be carried out before the main HEC season. Senior forest officers should take interest in operation of ADS and should participate in some ADS operations. Coordination between territorial and wildlife divisions supervised by a senior forest officer is very important for effective functioning of ADS.

ADS should use humane techniques to drive away elephants. They should not fire at elephants, poke them with sharp instruments or beat them with sticks. ADS staff should be sensitized to humane management of elephants.

When the elephant herd splits into smaller groups it becomes difficult for the ADS to manage the group. ADS should work in partnership with the community so that the community can manage the situation, where ADS cannot reach. This requires empowerment of the community with equipment, material and training. Such operations should be monitored to ensure that the community does not misuse the capacity delegated to it.

17. Compensation (Ex-Gratia Payment)

The rates for crop compensation should be commensurate to the crop damage. It is recommended that compensation for crop damage should be about 60% of the estimated crop damage. If the compensation is close to 100% of the crop value there will be no incentive for the farmer to protect his crops.

Adequate financial provision should be made for compensation for HEC by the states with support from Project Elephant.

The process of spot inspection, preparation of case papers, forwarding to higher authorities and award of compensation and payment should be expedited. Procedural changes should be made by the states wherever necessary. Ready to fill formats should be circulated so that the inspecting staff does not have to write long descriptions. Cases should be received by the Range Officer, or even the Beat Officer, so that the affected farmers do not have to travel long distances to file the case or receive compensation. The entire process should be time bound. It is recommended that farmers should receive compensation within 15 days from date of the incident.

False compensation claims should be detected and rejected. Above a certain value, revenue authorities should be involved. If the amount is high, a gazetted officer should do the inspection. If the value is exaggerated, there should be penalty for false claims.

Computerization of cases of crop and property damage by elephants should be initiated by all states to hasten the process of compensation. A database should be prepared so that the data may be used in future use and manipulations are reduced.

In case of human injury the victims are sometimes seriously injured and lose their jobs and livelihood. Provisions should be made for free treatment in Government hospitals. If medicines are not available, the hospitals authorities should make the arrangement or send the patient to better hospital at their cost. The costs should be reimbursed to them directly by the Forest Department without involving the patient. Medical treatment continues long after discharge from hospital and considerable expenses are incurred. The Government should pay these expenses as long as the treatment continues, even if it takes a year or two. The affected person should be suitably rehabilitated. NGOs with appropriate expertise should be involved so that they can do the necessary hand holding for rehabilitation of the person.

In case of human death the compensation should be minimum Rs. 5 lakhs. In such cases also an NGO with requisite expertise should be involved to rehabilitate the next of kin.

18. Crop Insurance

The Pradhan Mantri Fasal Bima Yojana (PMFBY), which was introduced in 2016, provides insurance to a wide variety of crops at a very low premium. The MoEFCC has requested for inclusion of crop damage by wild animals in the scheme. As and when this feature is incorporated in the scheme the State Governments and the Forest Departments should promote this scheme vigorously in regions where there is crop damage by elephants and wild herbivores.

19. Elephant Drives

Elephant drives with the objective to push elephants from one administrative area to another should be avoided. In no situation elephants should be driven for long distances. This causes stress to the young calves in the group and they may die. Elephant drives, if at all they are carried out should be solely with the intention of herding elephants away from a human populated zone. In some situations elephants may be herded away from hazardous situations such as at international boundaries where they may be endangered. Once they are outside the human use zone or the danger zone they should be left alone. Care should be taken to ensure that the driving operation does not split the herd. This increases the conflict and also disturbs the social structure of elephant groups.

20. Early warning SMS alert systems/WhatsApp Group

Systems based on laser beams have been used on Valparai Plateau in Nilgiri Hills, Tamil Nadu to provide early warning of elephant arrival. A system of sending SMS alerts of elephant presence has been developed to warn of elephant presence. A system of pulsating warning lights on towers that warns of elephant presence in the area has been developed. These methods are useful in reducing incidents of human mortality due to encounter with elephants. These methods are useful in situations where encounters with elephants are high. Warning about elephant presence may also be advertised through local/ cable TV channels. They should be implemented in other areas where similar situation exists.

Early warning system through WHATS APP and regular broadcasting of herd locations every day and their possible route may also be followed.

21. Primary Response Teams & Rapid Response Teams

In some areas elephants are prone to enter high population density areas in large numbers. In such situations quick response by the Forest Department is important for preventing loss of human life or damage to property.

ADS have worked reasonably good in North Bengal but ADS cannot reach out to all places. We need to develop primary response team (PRT) in each village who could work as first level of defense to drive the elephant and keep crowd away till the time the Rapid Response team (RRT) reaches. The RRT should ideally consist of a biologist, veterinarian and a biologist to address all aspect of the conflict. Both the teams have to be adequately trained and equipped in HEC mitigation. The PRT and RRT should also be insured to take care of their families in cases of accidents/ deaths during HEC mitigation and continuous medical facilities be provided in case of severe injury till the person recovers.

These teams should work in a planned manner and carry out the operations quickly and effectively. Their main job should be to herd the elephants away from human inhabited areas. They should be well equipped and disciplined. A 24 hour control centre should be formed in critical areas and the toll free telephone number of the control centre should be given wide publicity. Such a strategy has been used effectively by the Tamil Nadu Forest Department in Valparai Plateau and by Chhattisgarh Forest Department.

22. Minimizing Human Encounters with Elephants

Human injury and deaths are the result of human encounter with elephants. The key to minimizing loss of human lives is minimizing unexpected encounters with elephants.

In some regions for e.g. Valparai encounters with elephants often take place in low light conditions when people bump into elephants accidentally when returning from work in the evening or going for work in early morning. A large number of cases of human deaths / injuries in the country involve people who trespass into elephant habitats or indulge in collection of timber, firewood, fodder, tendu leaves, mahua and other NTFPs. The villagers visiting forests for attending nature's call often fall victims to elephants. Elephants are also known to be attracted by country liquor stored in houses. The possibility of fatal encounters is higher when the person is alone. Knowledge of these factors can help to prevent such encounters.

At the beginning of each HEC season the Forest Department should launch an awareness campaign about important Dos and Don'ts for avoiding chance encounters with elephants.

In regions where possibility of such encounters is high public alerts should be sent about presence of elements. The SMS alert system implemented at Valparai is a good example of the effectiveness of this system.

23. Capture and relocation of elephants

In regions where elephants have moved out of the more intact forest areas, especially protected areas or large reserve forests, into human-dominated landscapes primarily for crop raiding, the levels of chronic conflicts are usually unacceptably high. These elephants may either be solitary bulls or bull groups, as well as family groups. Usually these elephants become virtually resident in commercial plantations such as coffee estates, orchards or small plantations that offer excellent canopy cover, or use smaller patches of forest (such as those regenerated under Joint Forest Management programmes) to take shelter during the day and raid the surrounding crop fields at night. Examples of these situations include districts in Karnataka such as Hassan and Kodagu with extensive coffee plantations, and southern Bengal with regenerated forests under JFM.

There may be no other option but to capture these elephants. The question then arises as to what should be the course of action after capture; should the elephants be released back into a forest or should they be retained in captivity. The first option is obviously the more desirable one when this is feasible. If a state has forests suitable for relocation, the option of releasing the elephants there should be first examined. There are indications that subadult or young adult bull elephants of the age of emigrating from their natal families are likely to settle down in another forest area through such "assisted dispersal". However, it should be emphasized that there is no foolproof guarantee of success in relocating elephants that have been in conflict with people. This is a learning process in elephant management. In the past, most experiments in capturing and relocating adult male elephants have failed with

the bulls going back to their original place of capture. Relocated elephants should be fitted with GPS-based collars to monitor their movement with the option of recapturing them in case they again come into conflict. The site of release should be at sufficient distance (typically of the order of 200-300 km or greater) such that it is unlikely that the elephant would be familiar with the new site and attempt to go back to the place of capture. “Soft release” options can also be experimented with; this would involve keeping the animal in a stockade for some limited time period at the proposed site of release before letting it free.

In some instances the best option or the only option may be to retain the captured elephant or elephants in captivity, especially if the animal has killed people on multiple occasions and the risks of release into the wild are too great. In recent times, Karnataka and Tamil Nadu have exercised this option after seeking expert opinion. Only some states have the skills to capture and train large bull elephants, and other states should build their own capacities with the assistance of the former. If elephants are retained in captivity it is essential to consider their use and their welfare.

The availability of immobilization drugs and competent veterinarians during capture operation are important issues and these should be made available to SFDs all the time.

24. Reducing Retaliatory Killing of Elephants

Communities affected by HEC sometimes resort to retaliation against elephants that can result in their death. Electrocution is one of the common methods use for killing elephants. There are cases where the electric wire was set for other animals like wild pig or gaur and resulted in death of elephant. There is a need to introduce people to the safer option of using power fences to protect crops rather than using unguarded electric wires (power lines). Poisoning due to retaliation is also a major cause of killing of elephants. In other cases people have been known to shoot elephants. The animals are either buried (a herculean task) or the death is faked as accidental death. Sometimes bullet wounds don’t kill the animal immediately but it dies a slow death later due to infection of wounds.

At the beginning of each season the Forest Department should hold meetings in all villages and warn people against using practices such as electrocution or shooting. They should be informed about the seriousness of the offence and option of legal action against the culprits in case deliberate killing of elephants.

The various measures outlined in these guidelines will help to reduce retaliatory killings. Generation of sympathy towards the animal can play a major role in reducing such killings.

25. Seasonal Planning for HEC Management

There should be effective planning at the forest division level and range level for management of HEC at the beginning of each season. This local knowledge should be tapped and used for planning HEC management for the season. Responsibilities should be allocated and strategy for HEC management should be decided.

Similar planning workshop should be held at forest range level for all the frontline staff of the range to plan HEC management for the entire season.

26. Documentation of local knowledge

In each region there is considerable local knowledge about seasonal elephant migration routes, elephant groups and their sizes, entry points and crop raiding patterns. This information is available with the field staff but generally not documented. This knowledge should be documented for use of elephant conservation and elephant management in future years. The documentation should be done in a simple format circulated by the Chief Wildlife Wardens. These documents will provide valuable information that will help in HEC management. It can also form basis of elephant conservation in the state.

27. Mob Control

Often presence of mobs makes management of HEC situations very difficult. Sometimes human deaths take place when people get in the way of fleeing elephants. In such circumstances mob control becomes an important part of HEC management. An effective mob/crowd control plan should be chalked out in areas where such situations are frequent. Help of District Administration particularly Police Department should be taken for mob control. For this communication and planning with the Police Department is necessary at the start of the HEC season. Police officers should be educated and trained about management of elephant groups so that they take prompt and effective action in such situations.

28. Managing Private and Temple Elephants

There are several instances of private elephants and temple elephants getting scared and going out of control, often during processions, due to loud music, crackers and presence of large crowd, etc. As far as possible, elephants should be kept away from congested places and large crowds. Assembly of elephants in temples or other public places should not be permitted unless the organizers have taken adequate measures to deal with any emergency. It should be ensured that the elephants, particularly bulls, participating in public functions are manned only by trained and experienced

mahouts. A dossier should be maintained of all elephants which have the history of being ill-tempered. Standard operating Procedures (SoPs) should drafted for tackling such situations. Rapid response teams should be formed by the Forest Department in big cities to tackle such situations.

Captive elephant welfare committees should be constituted at State and District levels to ensure welfare and humane treatment of captive elephants, particularly in private custody. Chief Wildlife Wardens should periodically monitor ownership certificates/ microchips of elephants. The implementation of the guidelines for welfare and management of captive elephants, issued by the Ministry on 8.01.2008, should be enforced in letter and spirit. The Ministry has also issued on 29.09.2017 standards/ norms for giving recognition to elephant housing facilities for captive elephants, including temple elephants.

29. Managing Transboundary Elephant Movement

Some elephant populations are known to regularly cross international and state boundaries. In India this occurs regularly on the international boundary with Nepal, Bangladesh, Bhutan and Myanmar. Elephant populations regularly cross interstate boundaries in many elephant states. There is a tendency to push the elephant populations back to the home state/country using harsh methods, resulting in much hardship to elephants, especially young calves. Elephants are even shot with 12 bore shotguns. The gun shots cause injury and death of elephants due to festering wounds. Such injured elephants are extremely dangerous. All efforts should be made to avoid such practices.

Interstate coordination committees should be formed at the local level and at the level of Chief Wildlife Wardens. They should meet regularly, share information and plan for management of elephants. The practice of coordination committees should be followed even within the state between neighbouring divisions and between territorial and wildlife divisions. The Central Government has signed a MoU with the Government of Bangladesh for transboundary conservation of elephants in India Bangladesh elephant landscape on 27.7.2017 at Shillong. The Joint Working Group has been constituted by two countries to develop standard operating procedures and protocol for conservation of elephants. Similar arrangements should be established with other neighbouring countries e.g. Nepal, Bhutan and Burma.

Sympathy is needed by forest officers and people on both sides of the boundary. Strong communication should be established between forest officers on both sides to ensure that no harm comes to elephants. Elephants should be allowed to follow their natural migratory paths. Preparations should be carried out to ensure that there is minimum damage and hardship to people during their stay on the other side

of the boundary. The recommended strategy in such cases should be to prevent the movement of elephants to undesirable areas with the help of suitable barriers and to translocate / capture the straying elephants. The more experienced and knowledgeable partner should share their knowledge of elephant management and, if necessary, conduct training session for the partner on the other side of the boundary to help in managing HEC. Such dialogue should continue throughout the HEC season.

Elephants are known to be expanding their range to non-elephant districts of Northern Andhra Pradesh, Chhattisgarh, Bihar, MP, Maharashtra and Goa. Similarly, suitable elephant habitats no longer exist in parts of Nepal adjoining North Bengal and parts of Bangladesh adjoining Garo Hills (Meghalaya). The recommended strategy in such cases should be to check the movement of elephants to undesirable areas with the help of suitable barriers and to translocate / capture the straying elephants.

30. Rescue and Rehabilitation Centers

A number of elephant rescue and rehabilitation centers have been formed in the states, with support from Project Elephant. Some of these centers do not have requisite approval of the Central Zoo Authority (CZA). All elephant rescue can rehabilitation centers should get approval of CZA and follow CZA guidelines for their management. Other states that have presence of elephants should also set up at least one elephant rescue and rehabilitation centre. Elephant rescue and rehabilitation centers should be well managed and should be provided adequate funding.

Chief Wildlife Wardens should ensure that Rescue and Rehabilitation Centers for elephants as well as housing facilities for captive elephants are maintained properly to avoid complaints about cruelty/ ill treatment of elephants, received from various quarters.

31. Training of Mahouts and Kawadis

India has a long history of keeping elephants in captivity. The relationship between elephant and mahout is very complex. It is essential that mahouts and kawadis are imparted training regularly in proper handling of elephants. Registration of mahout/kawadis as trained and licensed handler of elephants with the forest department also needs to be considered.

32. Humane Treatment of Elephants

Though elephants have to be kept away from human use areas the techniques used should be humane and should not cause harm or suffering to elephants. This is especially true in case of some harsh techniques used by anti-depredation squads

and frontline staff during elephant drives. Communities also need to be educated about humane treatment of elephants.

33. Attitudinal Change

A campaign for creating awareness of elephant needs to be instituted. The Elephant Task Force has also recommended a campaign named *Hathi Mere Sathi* for this purpose. Communities also need to be educated to take responsibility in managing HEC. The community should be educated about habitat fragmentation due to encroachments and it role in increasing HEC. There is also a need to extend educational and awareness programmes for the development agencies, railways, power, irrigation,, highways, mining companies, tourism industry, district administration, etc.

34. Communication

Effective communication is an important aspect of managing HEC. The recommended communication flow is given in Figure 1. The flow chart is indicative only and not meant to imply that communication flow is one way.

The Chief Wildlife Warden and PA Managers/ DFOs should decide the policy and strategy for managing HEC for the entire state. They should decide the publicity literature and training material for the frontline staff and the community. This information should be communicated to the field officers.

Figure 1: Chart for Flow of Communication of HEC Management Strategy & Literature

Figure 1

The Field officers will communicate the HEC management strategy to the frontline staff along with detailed planning for their forest divisions. They will provide the communication literature to the frontline staff. They will conduct trainings for the frontline staff for implementation of HEC management in the field.

The frontline staff will communicate the HEC management techniques to the community along with the publicity and awareness literature. They will train the community in HEC management techniques.

Communication channels between the community and Forest Department should remain open at all times to ensure good management of HEC. The community should be informed contact numbers of the local member of frontline staff in case of arrival

of elephants or crop damage. SFDs also need to set up a grievance redressal system for communities and the frontline staff.

35. Training of frontline staff and farmers

Training goes hand in hand with communication. Frontline staff as well as community should be trained in techniques for management of HEC. At present the most commonly used techniques are noise making techniques followed by drives. The stakeholders should be educated in alternative techniques for deterrent measures, early warning systems and effective repellent techniques. The training program should be coordinated by the State Director, Project Elephant.

36. Research and Development

Elephants are highly intelligent animals. They soon learn about HEC mitigation measures and become habituated to them or learn to circumvent them. Therefore many HEC mitigation measures gradually become ineffective. New techniques should be constantly introduced to keep elephants away from human use areas. Methods should be constantly altered and modified to avoid habituation by elephants. The Forest Departments, research institutes and NGOs involved in elephant conservation should carry out experiments to develop novel techniques for mitigation of HEC. The PE Division should play a nodal role in disseminating this information to the states by conducting workshops and circulating reports and publications.

We should also upfront ask for a comprehensive policy framework for elephant-human conflict mitigation. Guidelines can only be framed to help implement a policy.

Research should be carried out on a number of repellants and deterrents that need to be tried and tested in the Indian conditions before applying on a large scale to mitigate HEC.

Climate change is likely to be a major factor in near future influencing elephant behavior and habitat thereby leading to escalation of HEC. Research is required to understand the possible impacts of climate change on elephants and their habitats and develop plans for mitigating adverse impacts.

Research and Development is also required for developing reproductive control measures (using immuno-contraceptives or any suitable alternative) and protocol for dealing with local abundance of wild elephants leading to high levels of HEC and regulating captive elephant populations in camps.

There is lot of data being maintained by SFD on conflict but not effectively used except for ex-gratia support. There is no systematic analysis of the data at landscape

level to understand the pattern and level of conflict and to predict the overall trend and places of conflict hotspots based on which mitigation measures could be planned and adapted. The information could also be analyzed based on LULC the landscape to understand the main drivers of conflict and plan accordingly.

37. Assessment of HEC zone

A data base has to be maintained by each state for effective assessment of damage and compensation. But the data has to be also analyzed extensively to understand the pattern of conflict, trends and identify conflict hotspots to predict the trend and places of conflict based on which mitigation measures could be planned and adapted.

The HEC zone should be assessed and mapped for deciding on the type of intervention to be taken for conflict mitigation. The vulnerable areas should be identified and the damage to crops and human deaths should be assessed across landscape.

38. Implementers of guideline/Involvement of Stakeholders

Multiple stakeholders like MoEFCC; Ministry of Agriculture (including Department of Animal Husbandry), Ministry of External Affairs (MEA); Research Institutes; State Departments of Finance, Agriculture, Animal Husbandry and Health; District Administration; Local Bodies; Police; linear developmental agencies (Railways, NHAI, power, etc), Ministry of Homes, District Administration and Civil Societies should be involved along with the State Forest department and local communities for effective planning and implementation of mitigation measures. With so many agencies being responsible for executing the guidelines, a coordinating mechanism must be put in place.

39. Enrichment of deemed forest:

There are some good patches of 'deemed forests' or forests not under the forest department, though classified as forest according to the judgment of the Hon'ble Supreme Court. Some of them are degraded, but can be improved as good elephant habitats. They need be enriched to serve as elephant habitats.

Contents

Appendices

Acronyms

HEC – Human-Elephant Conflict
CPEMC – Central Project Elephant Monitoring Committee
MoEF&CC – Ministry of Environment Forests and Climate Change
ADG – Additional Director General
CWLW – Chief Wildlife Warden
PCCF – Principal Chief Conservator of Forest
WII – Wildlife Institute of India
WTI - Wildlife Trust of India
WRCS – Wildlife Research and Conservation Society
NCF – Nature Conservation Foundation
IUCN – International Union for Conservation of Nature
CZA – Central Zoo Authority

Executive Summary

Human-Elephant Conflict (HEC) is one of the major wildlife related issues of this country. Due to increased human population, forest fragmentation and degradation, conflict with wildlife seems inevitable. Chhattisgarh is one of the best example for HEC. Historically, the state was devoid of elephant population. Small elephant population originally migrated from Jharkhand and Odisha during the 1980s and 1990s (re-colonization). HEC cases have been increasing from the year 2000 as the number of migratory elephants have steadily increased. Considering all factors,co-existence seems to be the key and necessity for survival of both us humans and the wildlife. Keeping this theme at the centre, the3rd Regional Workshop on "Right of Passage to Elephants" to mitigate Human-Elephant Conflict for East-Central Region was held at Chhattisgarh. It proved to be a wonderful opportunity to bring together all experts working in the field and as well as at policy level. The Central East Region states comprises of a landscape which elephants use frequently. The state borders are only for people and no wildlife abide to human boundaries. Hence collaboration between these states is crucial to understand the larger picture of HEC. Co-ordination between states is required now more than ever to address and deal with this sensitive issue.

*The workshop was conducted on 1st and 2nd July, 2019. Workshop Agenda is annexed(**Appendix I**). Post 2nd Central Project Elephant Monitoring Committee (CPEMC) meeting held at Ambikapur on 29th and 30th June, the workshop was held at State Headquarters AranyaBhawan. Apart from CPEMC members, officers from MoEFCC, forest department officers from PCCF, CCF to DFOs, wildlife experts from Wildlife Institute of India (WII), members of Non Governmental Organisations participated in this workshop. A list of all participants is annexed(**Appendix III**).*

A total of 4 Technical Sessions were organised across 2 days which included presentations from CWLW of Central East Region States viz. Odisha, West Bengal, Jharkhand, Madhya Pradesh and Chhattisgarh. Non Governmental Organisations such as Wildlife SOS, WTI, WRCS, NCF, IUCN shared their work knowledge regarding HEC, elephant ecology and behaviour in various landscapes of Central East Region and other parts of the country with elephant distribution ranges.

Central East region states presented HEC in their respective states. Most common problem among all the states was fragmentation of elephant habitat and lack of good forest. Corridor movement turned out to be crucial in understanding the movement patterns and elephant distribution dynamics at landscape level. States provided conflict data for the past 10 years and more and how it has changed over the years. At present, HEC seems to be increasing across the country.

Wildlife Institute of India and various research organisations shared their research studies conducted across India. Recent techniques like satellite collaring and use of social media proved effective in monitoring elephant movement and alerting local communities to minimise the damage. A wide variety of protective measures were suggested. Since adequate financial support was lacking, low cost technologies were suggested to be used in elephant affected areas. However, appropriate budget is crucial to conduct Project Elephant activities. Policy level change is surely needed to address this issue similarly in each of the states.

After 2 days of brainstorming sessions, the conclusion for handling HEC came out to be several factors. A Strategic Action Plan is required specially for Central East Region. Inter-state Coordination Committee needs to be established to help each other in dealing with HEC effectively. Getting finance to fund Project Elephant activities is crucial. Capacity building of staff is necessary to handle HEC without causing any damage to elephants or humans. Sensitizing local communities living in elephant landscapes to learn to co-exist is another important matter to look after and leave the elephants alone.

Day 1st – Monday 1st July, 2019

Inaugural Session

The workshop was inaugurated by Chief Guest Shri. M. S. Negi, ADG (WL), MoEF&CC in the presence of Shri. Rakesh Chaturvedi, PCCF Chhattisgarh, Shri. R. K. Singh, Retd. PCCF and HoFF, Chhattisgarh, Shri.Atul Shukla, PCCF WL, Chhattisgarh. Ceremonious praying of deity Saraswati was done by the guests and workshop proceeded forward.

Shri.Vishwesh Kumar, DFO Balodabazarcoordinated the announcements of technical sessions and introduced speakers who gave presentations in each technical session.

Welcome Address - Shri. Rakesh Chaturvedi, PCCF, Chhattisgarh Forest Department

Shri.Chaturvedi gave a brief account of history of elephant presence in the Chhattisgarh state. There is a note in Bilaspur District Gazette which testifies that during 1700 AD period of Mughal Empire, elephants were used to be bought for the kingdom. However, there were no natural population existing in that period. During 16th to 18th century, a natural population did exist in the state and then later disappeared. After that, in 1982-83, elephants started migrating from Palamau, Jharkhand to the Chhattisgarh state. At present, post 2017-18, there are about 280 elephants in the state. A herd of 18 individuals was recorded at MandirHasod, of which 2 elephants travelled to Gadchiroli, Maharashtra and again came back. In future, we might see movement of elephants from Tadoba to Odisha after seeing their current movement pattern.

Regarding HEC, number of conflict cases are decreasing from Ambikapur district and increasing in other districts of the state. HEC is one of the burning issues during every Vidhan Sabha Session. Shri.Chaturvedi gave details of proposed Lemru Elephant Reserve. He mentioned that there are 3 villages present in the area and the Cabinet has given approval in principle for the said reserve. First discussion regarding the same has taken place and the next meeting will be conducted on 3rd August, 2019.

Keynote Address - Shri. M. S. Negi, ADG (WL), MoEFCC

Shri.Negi thanked Chhattisgarh Forest Department for conducting a successful field visitof CPEMC members at Ambikapur. He appreciated the work of the Chhattisgarh Forest Department in handling conflict situations. The major objective to solve HEC is to sensitize the public and convince them to allow wild animals to move in their natural habitatas conservation is important for both elephants and people.Shri.Negi stated that findings of the CPEMC meeting and this regional workshop will yield better results to mitigate HEC in all Central East Region states. Communication between states is important and it needs to be improved further for better results.

Addressing conflict along linear infrastructure projects is very important. The guidelines formed by Ministry with the association of WII, NHAI and NTCA are to be followed religiously for conservation of wildlife.Efforts should be targeted at not constructing roads through wildlife sanctuaries. Proper construction of crossing structures is essential for passing/crossing of wildlifeto avoid conflict situations. Field officers should be advised to strictly follow the guidelinesissued by the Ministry.

Electrocution of elephants is high in the states of Odisha, West Bengal and Chhattisgarh. 33KV lines are most dangerous for elephants andutmost care should be taken to avoid electrocution of elephants through these lines. Ministry is taking necessary steps with the Ministry of Agriculture to modify the Crop Damage Insurance Scheme for better compensationto villagers. To prevent entry of elephants in the crop fields, lemon grasscan be cultivated around villages and some villages can be developed as model villages.

Chief Guest Address – Dr. R. K. Singh, Retd. PCCF and HoFF, Chhattisgarh

Dr. R. K. Singh gave a brief history of elephant movement in Chhattisgarh state. In 1920, elephants were recorded in northern part of the state. Later elephants re appeared during 1988. During that time the state was part of Madhya Pradesh and the policy at that time regarding elephant movement was to put barrier and drive elephants away. In 1993, the state invited people from Karnataka to capture these elephants and a documentary "Last Migration" was also made during that time period. After that for 7 years, there was no migration recordedin the state. In the year 2000, elephants moved back into the state.

At present, there is need of landscape level plan for conservation of elephants and tackle HEC. The proposed Guru Ghasidas Tiger Reserve and Sanjay Tiger Reserve, MP comprises a landscape of about 4000 sq.km. There are many villages dotted across the elephant landscape and hence village relocation is a huge task. There is need to make necessary changes to current relocation policy. For elephants, CPEMC states should identify specific conservation zones and ask for funds from government to do the same. There is no capacity to manage HEC in the state.

Similarly, drug procurement is another issue and state faces difficulty in getting the drugs in time. Dr. Singh suggested that WII can have a satellite centre for training in Karnataka for ease of access. Use of latest technology like drones, artificial intelligence (AI), proper safety gears for staff is essential for managing HEC effectively. There should be uniform level of compensation provided to the conflict victims. Currently, compensation provided by Odisha is higher and lower by Jharkhand with respect to Chhattisgarh state. Adequate rescue centre for elephants and hospitals for people is important to minimize casualty cases on both ends. Inclusive governance is required for conservation of both elephants and people.

Technical Session I – Presentations

Chair – Shri. M. S. Negi, ADG (WL), MoEFCC
Co-Chair – Shri. N. K. Vasu, PCCF and HoFF (Retd.), Assam

Presentations by Central East Region states

Presentation 1 – Shri. P. K. Verma, PCCF, Jharkhand

Shri.P. K. Verma delivered a brief presentation on HEC in Jharkhand state. He mentioned that the entire geographical area of the state was influenced by elephant movement. Following facts were presented in the presentation.

A total of 678 numbers of elephants were recorded in Jharkhand according to 2017 census by MoEF&CC.Jharkhand State has two resident elephant population zones, viz. Palamau and Singhbhum.Palamau population occupies Palamau Tiger Reserve and adjoining forest areas. Singhbhum Region, comprising mainly Saranda, Chaibasa, Kolhan, Porahat, Saraikela-Kharsawan and Jamshedpur is declared as SinghbhumElephant Reserve.

In recent years, elephants have started moving into new areas of Hazaribagh, Ranchi, Khunti, Gumla, Ramgarh, Bokaro, Dhanbad, Giridih, Deoghar, Jamtara, Dumka, Pakur, Godda and Sahibganj districts passing through fragmented forest patches, agricultural land and humansettlements.Inter-

State movement of elephants also take place withinOdisha, West Bengal, Chhattisgarh, Bihar. Due to fragmentation of habitats for various reasons, elephants are changing their established migratory routes. A study conducted by WTI also showed that the corridors are disturbed which also might be the reason behind extensive elephant movement in the entire state. Around 300 individuals were believed to be roaming ones outside the resident population of the state.

Regarding HEC, a total of 302 cases of human casualties were recorded. Shri.Verma explained that the deaths occurred last month from the date of this workshop, an adolescent elephant moved away from its herd and inflicted 9 human deaths in 3 districts. He also mentioned that out of these, 7 cases were avoidable as people killed were the main cause behind this. Curious people due to ignorance or lack of common sense ventured very close to this animal and got killed in the process.

Discussion –

- Shri. M. S. Negi pointed out in the presentation to add the human and elephant mortality in the same table to better represent the data and have a clear understanding about patterns to be seen across the years. He suggested to build a short term tranquilization and rescue centre to deal with problematic animals. A proposal regarding the same can be submitted to CZA, he added.
- Shri. Sanjay Mohan, PCCF (WL) Karnataka added that expenses up to 2 lac occur per elephant at a rescue centre and hence temporary elephant camps proved to be a better option in the Karnataka State.
- Shri.P. K. Verma upon question of elephant mortality causes answered that the reason is not related to conflict. Also timely compensation to victims is paid but delay often do occur in the process of verification for each case of conflict.
- Dr. P. K. Malik, WII suggested all attendees to not to use drugs like ketamine and xylazine especially for animals that are in musth.

Presentation 2 – Shri. R. K. Sinha, PCCF, West Bengal

Shri.R. K. Sinha explained that West Bengal has two distinct elephant populations viz. North and South Bengal. Population trends for both showed an increasing trend since the year 1989 where 175 individuals were recorded from North Bengal and 4 individuals from South Bengal Population. Year 2017 data showed that the population of North Bengal is increased to 488 individuals and 194 individuals from South Bengal. North Bengal population is resident while South Bengal has both residential and migratory population. A total of 14 corridors have been identified and most of them are fragmented. Out of these, 4 corridors accountfor100 elephants. Over the years, North-South migration of elephants has increased as it was shown through maps in the presentation.

Shri. Sinha stated that West Bengal accounts for 2% of all elephant population in the country yet 25% of all human deaths are recorded from this state alone. Regarding elephant deaths, he mentioned about an old railway line about 120 years' old which was earlier narrow gauge and converted to broad gauge in 2004. Since then 69 elephant deaths have been occurred. No elephant death has occurred in forest area in the past 4 years. To deal with conflict issue, 3 tranquilizer guns are available with the state forest department and staff is qualified to use these guns in the field, he mentioned.

Presentation 3 – Shri. P.K. Sahu Dy. C.F., O/o PCCF (WL) and CWLW, Odisha State Forest Department

In the introduction, it was mentioned that out of 30 districts of the state, 28 have elephant distribution suggesting that entire state was under elephant movement area. 14 corridors have been identified in the state. Census data of year 2017 showed that there were a total of 1976 elephants recorded in the state. Threats to elephant population were similar as addressed by earlier speakers which were shrinkage and defragmentation of habitat, HEC and increased threat from poachers.

A total of 402 elephant deaths were recorded since the year 2015. Majority of the cases were related to disease followed by accidents and electrocution. 13 cases of poaching were recorded through the

time span. For 62 cases, cause of death was unknown. 434 human deaths occurred during similar time frame for which due compensation was paid along with compensation for injuries and property damage with respect to house, cattle and crop damage.

To deal with HEC, following steps were taken by Odisha Government:

- A "Standard Operating Procedure (SOP) to deal with emergency arising due to straying of wild animals in human dominated landscapes"was approved.SOP provides for a Permanent Anti Depredation Committeein all divisions to deal with animal-human conflict or straying of the same into human habitations in an area and to impart technical guidance, monitoring of the situation on day to day basis. DFO is the chairman of the Committee. In case, the forest division falls in more than one district, the representatives of collectors & superintendents of police of all such districts are nominated. Normally the committee meets on six monthly bases to take stock of the situation.
- "Wildlife Protection against Electrocution-Cell" has been constituted in each district which includes representatives from Electricity Dept., Forest, NGO, Police, etc. under the chairmanship of the collector.
- Solar fencing around the crop field has been taken up effectively in some of the divisions.
- Gajah Vehicle has been procured for mitigation of man-elephant conflict.
- Drone has been utilized to know the presence of elephant herds.
- Improved coordination &operationalisation of WhatsApp group.
- VSS / EDC are engaged for creating awareness among villagers in elephant prone areas.
- Effective issue of caution order by Forest Dept. to railway authorities - Continuous hooting in the sensitive zones identified by the State Forest Department is carried out.Locomotives are provided with powerful beams in the sections.Clearing of vegetative growth in 30 m width on both sides of the track has been done.The VHF sets of State Forest Department and Railways have been synchronized for proper communication system so that drivers can be informed of the presence of elephant herds to enable trains to slow down or stop.
- The Forest Department staff along with anti-depredation squad and local villagers of the concerned area patrol day and night and try to drive away wild elephants from the agriculture field, human settlement into the nearest forest.The Police and local people jointly participate with the Forest Department to track and monitor the migratory elephants.
- Meeting of the Inter-State Coordination Committees on elephants on Human-Elephant conflict are being organized regularly to mitigate the problems arising out of trans-boundary migration of elephants to Odisha from Andhra Pradesh.Expert Committee has been constituted in the State under the chairmanship of Principal CCF (Wildlife) & Chief Wildlife Warden, Odisha to mitigate Man-Elephant conflict in the State.

Presentation 4 –Shri. J. S. Chauhan, APCCF (WL), Madhya Pradesh

Shri. Chauhan gave brief history of presence of elephants in Madhya Pradesh. He mentioned that old working plans indicated presence of elephants in Sidhi District.After partition of Madhya Pradesh and Chhattisgarh, wild elephants came to Sidhi, Singrauli and Shahdol districts of Madhya Pradesh from 2002 to 2007, 2009, 2013 and from 2017-2019.There is no resident breeding population of wild elephants in Madhya Pradesh at present. Currently 38 elephants are present since last 6-7 months in forest areas of Shahdol and Bandhavgarh. Another herd of 7 elephants is moving in Sanjay Tiger Reserve, Sidhi since March 2019. There is no identified corridor as such in the state but Singrauli district area is probably used as a corridor.

With regards to HEC, no conflict cases have been reported till the year 2017.Death of two straying wild elephants in Sidhi district occurred due to electrocution in 2015. Destruction of property, crops

and 2 human casualties in 2018 were recorded in Sidhi and Shahdol. Destruction of solar water pumps/pipes, patrolling camps, crops and 1 human casualty were reported in 2019 in Sidhi district.

For HEC mitigation, following measures were taken by the forest department.

- Solar flashing lights were put around village boundary to prevent wild elephants from entering the villages.
- 24-hour vigil was kept by tracking party on the movement of wild elephants and the information was shared with the adjoining staff and the local communities.
- A team of staff lead by Assistant Director, Sidhi was sent to Sarguja to study the mitigation measures and response to such conflict situations.
- Elephant repelling fencing was prepared and put in and around affected villages.
- Fires with chili powder and grease was put along the village boundary.
- Grain bags were put in forest area to lead them back to their original habitat.
- An expert from North Bengal was called for driving wild elephants back to their original habitat.
- Publicity through posters/flex banners on how to avoid conflict with wild animals was taken up in the affected areas.
- The villagers were made aware of the elephant presence by way of announcements through village Kotwars and other means.
- Drones were deployed to trace the location of elephants in the forests areas.
- The effected villagers were given adequate compensation, food grains and plastic sheets.
- The headquarters were apprised daily of the situation and guidance was obtained from HQ continuously.

At the end, Shri. Chauhan made suggestions for better HEC mitigation. He explained that the conflict cannot be completely reduced to zero but surely can be minimised as much as possible. The solutions he suggested were constant maintenance of physical barriers, awareness campaign for local communities and special training for department staff to better deal with HEC.

Presentation 5 – Shri. J.A.C.S. Rao, APCCF (WL), Chhattisgarh

Shri. Rao gave a brief presentation regarding HEC in Chhattisgarh and mitigation measures done by the state to minimise the conflict. In a brief history of elephant movement in the state, he mentioned that a small elephant population originally migrated from Jharkhand and Odisha during the 1980s and 1990s (re-colonization). Since year 2000, elephant moved back into the state after a 7 years gap in the 1990s. At present, Chhattisgarh has a total of 247 elephants (2017 census report by Project Elephant Division, MoEF&CC). Distribution of elephants is mostly seen in northern parts of the state occupying almost 60% of the total geographic area of the state. Recent movement of elephants has been recorded in parts of UdantiSitanadi Tiger Reserve.

Regarding HEC, Shri. Rao explained mortality of elephants in the state for the past 10 years. A total of 119 elephant deaths occurred during this time span. About half of the deaths accounted for occurred due to natural causes. Electrocution was found out to be the major cause after natural causes. Electrocution cases mostly occurred as accidents. Other causes included disease and poisoning. Cases of poisoning were indirect causes and not directly related to conflict as these elephants became victims to poison which were put by villager to deal with other animals.

For human death and injuries along with property damage, the government has increased the rate of compensation. Compensation provided for human death was increased from Rs. 4 lac to Rs. 6 lac. In the year 2018-19 a total sum of Rs. 1751.57 lac was paid in compensation to conflict victims against 59 cases of human death, 41 human injuries, 22141 crop damage cases and 1743 cases of house damage. Trend in human deaths seems to be increasing for the past 5 years and showed a small decline in the past year. However, it is still long way to go to reduce human casualties.

Mitigation measures applied by the forest department were as follows:

- Collaboration with WII and Wildlife SOS to conduct scientific research and gather large number of data regarding elephant ranging patterns.
- Awareness campaign for villagers which included a daily radio broadcast "HamarHathiHamar Goth" to make people aware about daily elephant movement.
- Capacity building of department staff – training programmes for better dealing with HEC
- Distribution of equipment to field staff like high beam torches
- Use of physical barriers to restrict elephant movement near villages to minimize damage
- Use of Gajraj Van for alerting villagers about elephant movement in the vicinity
- Elephant Rescue and Rehabilitation Centre established at TamorPingla Wildlife Sanctuary to house captured elephants along with 5 kumki elephants that were brought in from Karnataka State
- Habitat development works which included developing water bodies which were proven effective by observing elephant movement using these water bodies.

Discussion Session

Dr. Prajna Panda asked a question regarding option of immunization instead of resorting to culling of elephants. Shri. Sinha responded that 90% of the killings happen to tusker elephants. Regarding culling of elephants, he stated that there should be a policy to select which individual to be culled.

Dr. A.J.T. Johnsingh gave recommendations for rescue centre at Pingla, Chhattisgarh which was visited by CPEMC team during field visit. He suggested to take care of water intake as its crucial for elephants. Neem trees can be planted in the centre, he added. If anyone is building a centre, he mentioned that one should consider a site where river crosses through a habitat which is an ideal place to put up the centre. He also explained that cement should not be used in the construction of dams inside protected areas. Instead earthen material shouldto be used.

Shri.Sanjai Mohan shared details regarding elephant camps in Karnataka state. He explained that there is no rescue centre in the state but elephant camps which act as temporary holding structure for captured elephants. About 7-8 such camps are present in the state which houses around 80 elephants. He explained that to establish a proper rescue centre is a huge challenging task requiring large budget of around Rs. 105 crores.Shri. Ajay Desai added that training elephants housed in camps and rescue centre is a difficult task. He also mentioned importance of revival of old techniques handed from generation to generation.

Technical Session II – Presentation by expert institutes and organisations

Chair- Dr. R.K.Singh, Retd. PCCF &HoFF
Co- Chair- Shri. Rajiv Shrivastava

Presentation 1 - Insights on elephant ranging patterns and HEC in Northern Chhattisgarh – Dr. BivashPandavWII

Dr. Bivash gave brief introduction on historic account of elephants in Chhattisgarh state. He explained that HEC emerged as an economic, social and political problem in the state. He mentioned that 40% of the state area fall under forests. However, good forest is rare as most of the forest area is patchy and fragmented. Presence of railway corridors, mining activities, linear infrastructures poses much threat to wildlife as not much consideration is taken into account during planning of construction of the said activities. Apart from these, local communities residing in and around forest areas, they are highly dependent on forest produce for their livelihoods. Seasonal burning of forest during Mahua

season, occur regularly. It results into clearing of the understory which destroys ground cover and most food species of herbivore wildlife in the area.

Later, Dr. Bivash explained activities conducted by his team. They have come up with a manual which shows photographic details of identified elephants in northern Chhattisgarh. Based on these identified elephants, ranging pattern were observed which yielded into good data. In an example, he showed movement of one individual which moved through northern districts of Chhattisgarh and entered into Sanjay Tiger Reserve of Madhya Pradesh state.

Satellite collaring studies were conducted by the team and 6 elephants were fitted with satellite collars. Of which 3 collars dropped off due to natural reasons. The collar provided insightful data regarding ranging patterns. Range pattern of one bull makhna named Behradev for the period of May 2018 to June 2019 showed to be 1450 sq. km. It also showed a distinct pattern in the places the male visited during musth and non-musth period. Ranging area included Surajpur, Balrampur and Surguja Forest Divisions. Another collared female named Gautami showed movement from Chhattisgarh to Odisha state. Also the path followed by her and the herd was exactly similar concluding that these animals follow the same path. Also most of the path included open terrain non-forest area and human settlements.The herd ranged in Surguja, Dharamjaigarh and Jashpur FDs in Chhattisgarh.During November 2018, the herd moved into Sundargarh FD in Odisha. In February 2019, the herd moved back into Chhattisgarh and then on to Mainpat. There were four human deaths during the period. The herd remained in large patch of forests belowMainpat for a longer duration.

Corridor movement observed in elephants was found out to be very fluid. Dr. Bivash mentioned that this fluid movement was due to diffuse boundaries in the region. Similar fluid nature was seen in individuals and also in a herd which had their own behaviour resulting into conflict situations. This makes driving elephants away from any area a tedious and unsuccessful task as elephants often follow their movement paths as they are highly intelligent animals.

Dr. Bivash explained human casualties' data which showed that most of the deaths happen in elderly people and males. Also deaths occurred majorly during night time when elephant movement is at its peak. About 40% deaths occurred near human settlements. Dispersing male elephants were mostly the main cause behind human deaths.

Presentation 2 –Key issues in Human-Elephant Conflict – Dr. A.J.T. Johnsingh

Dr. Johnsingh delivered a brief presentation encompassing the HEC throughout the country. For Chhattisgarh state, he mentioned to quantify Mahua trees as its essential for both people and elephants. He said that the elephants who raid crops are much healthier than their forest fed counterparts. He also explained the degradation of water sources due to pollution done by domestic cattle. Fresh water is crucial for elephant. Wherever there is scarcity of water, this issue can pose a serious threat for elephants residing in such water shortage areas.

Dr. Johnsingh provided statistical data regarding HEC with respect to human deaths, elephant mortality and crop damage. He explained behavioural ecology of elephants. Adult elephants weigh between 3000 and 5000kg. They need 250-300kg food and about 100 litres of water every day. They spend 16-20 hours feeding in the wild. Agricultural produce provides readily available high energy food.Crop raiding may become obligatory if there is scarcity of fodder in the forest as it is in most of our wild elephant habitats may be except in certain protected areas in northeast.Also if they have lost part of their home range to agriculture and development.Conflict is serious in Assam as large part of elephant habitat has been lost to encroachment. He gave two examples of a tusker, one named Big boss, one of the bulls radio-collared in Rajaji NP, never raided the crops as he had not lost his habitat either to agriculture or to development. On the contrary,Tippu, another collared bull, raided the crops often as he had lost considerable amount of his habitat to development.

Elephants are expanding their range, so Human Elephant Conflict in India has expanded from 132 districts in 17 states/Union Territories in 2000 to 248 districts in 23 states/Union Territories in 2018. One can easily kill a man-eating tiger or leopard and destroy the carcass totally. But this can't be done with elephants and so the problem is likely to grow in the years to come. Poor of the land will continue to suffer more.

Corridors are most important for safe movement of elephants. Dr. Johnsingh gave an example of Chilla-Motichur corridor in RajajiTiger Reserve, Uttarakhand. This corridor across Ganges connects two halves of Rajaji Tiger Reserve. Nearly 40 years have gone, the corridor has not been establishedyet.It is one of the simplest corridors in the country. Flyover for vehicles is needed. The army ammunition dump should be taken out from the area. Islands on the Ganges need to be given vegetation cover which can be done by growing native castor plants. Apart from conserving elephants, helping tribal communities living in elephant habitats is also important. He gave example of the Malasar community in Anamalai Tiger Reserve and the Kuruba community in Mudumalai-Bandipur-Nagarahole landscape.

He stated some suggestions from a report prepared by KarnatakaElephant Task Force. It stated following major points:

- Zones only for elephants and patrolling staff.
- Co-existence zone, where people and elephants try and manage to live amicably.
- Elephant removal zone where conflict is serious. Capture and train them for captivity and control the population by immuno-contraception practiced in Africa.
- Since the carrying capacity of our elephant habitats are exceedingly poor, control of the population should be a priority. Regarding elephant population estimation, Dr. Johsingh mentioned that we need a reliable method for estimation. Present method of total count using blocks lacks common sense.With any amount of training, no one will have the courage to walk through the bushes, locate, count and classify elephants into various age and sex categories. Tuskers can be identified easily and their population can be estimated. Focusing on tuskers the needed good can be and should be done for the elephants in the country.

Presentation 3 – Corridors of East-Central landscape and its protection – Dr. Sandeep Tiwari, WTI

Dr.Sandeep Kumar Tiwari gave brief introduction regarding details of increased HEC. Around 400-450 human death occur every year due to elephants. About 100 elephant deaths are reported due to man-made reasons. About 310 elephant mortalityaccounted by train hit (1987- June 2019); 55 in Central India. Central India has 10% elephant population but has 45% of HEC cases reported. In Odisha, 71 elephant deathsoccurred in 2018 of which 90 per cent deaths were human-caused.

India has a minimum of 101 elephant corridors today compared to 88 in 2005. Use of corridors by elephants paints a different picture. Almost half of the corridors are not used by elephants. Corridors have become narrower today. 76% corridors are of width 500 mts or less today compared to 30 % in 2005. 65% were 1-3 kms wide. 35% corridors are of length 15 kms or more compared to 15% in 2005.About 88% of corridors have forest, agriculture and settlements.Only 8% of the corridors free of human settlements.

Dr. Tiwari presented examples of 11 corridors in Jharkhand-South West Bengal. Major threats to these corridors were various kinds of encroachments. Similar problems were seen in 12 corridors between Jharkhand and Odisha. Corridors in Chhattisgarh however showed a different picture. He explained that there are no specific corridors and the elephant movement is spread over much larger area.

Major threats to corridors were explained to be lack of legal protection, lack of sound land use policies in elephant habitats, lack of awareness among local communities and other stakeholders and

fund allocation by Govt. to secure the corridor by either land purchase/ voluntary relocation of people or through community intervention.

For conservation and management of corridors, Dr. Tiwari suggested following points:

- All identified corridors to be notified as state Corridors
- Provide legal protection to all identified corridors. This could be under various laws appropriate for the state and corridor
- Declaring as Ecologically Sensitive Area/ Eco-fragile area
- Community or Conservation Reserve
- Increase boundary of existing PA and add corridor
- Declaring corridor land as RF or PF
- Other relevant state laws (Village Reserve Forest)
- Working plan of Forest Division/ Management plan of Protected Areas should include corridors in their area with clear conservation plan.
- Elephant corridors facilitating multiple species (especially tigers) should be given high priority and should be jointly secured along with NTCA and included in conservation plans of Tiger Reserves.

At the end, Dr. Tiwari provided an example of community lead organisation named "Green Corridor Champions" which includes group of individuals charged with the responsibility of sensitizing, motivating and mobilizing the local communities for securing corridors. Their role includes noting and finding solutions for potential threats and land-use changes in the corridor landscape;analysis of wildlife movement patterns through the corridor and in the connecting habitats; undertaking awareness activities under GajYatra by involving the local community in the corridor areaand working with local authorities and sensitize local politicians/ legislators on importance of the corridor and its legal protection.

Presentation 4 - Procedures for Procurement - Wildlife Restraint and Wild Animal Immobilization Anesthetic Drugs - Dr. P. K. Malik, WII

Dr. P. K. Malik gave introduction on different types of drugs which are used for restraining an immobilizing wild animals. There are 4 types of such drugs viz. Narcotics, Cyclohexamines, Sedatives and Tranquilizers. Narcotics are needed for animals like elephants, wild buffalo, rhino and gaur. Tranquilizers used only helps calming the animal by reducing stress during capture, transportation process. For carnivores, sedatives are used. Right dosage of drug is very important otherwise it can prove fatal to animal.
Dr. Malik provided examples of immobilizing drugs which are as follows:

- Traquilizers (Diazepam, Haloperidol, Acetlypromazine, Azaperone, perphenazine)
- Sedatives (XylazineHCl, Medetomidine)
- Dissociatives (Ketamine HCl, Tiletamine)
- Narcotics (Etorphine, Carfentanil, Thiafentanyl)
- Details of the relevant acts were given along with responsible authority implementing the act. Drugs and Cosmetic Act India, 1940 and Narcotic drugs and Pyschotropic Substances Act, 1985 were to be considered.

Procedure to procure drugs contains following 3 steps:

1. "No Objection" from DADF, Ministry of Agriculture
2. Drug Import License/Permit from Drugs Controller General India - After obtaining "NO OBJECTION" from DADF, Ministry of Agriculture, apply for drug Import Permit from Central Drugs Standard Control Organisation.
3. Import License/Permit from Narcotics Commissioner, Govt. of India - In case of Narcotic Drugs and Psychotropic Drugs such as Ketamine Hcl, an additional import permit from Narcotics Commissioner, Govt. of India is also required.

a. Possession Certificate/License and Transport Permit from Excise Commissioner of the state where the drugs are being imported
b. Fill Form IMP -1 available in the website of the Narcotic Commissioner, Govt. of India (http://www.cbn.nic.in/)

For safe immobilization and transport of wild animals, following requirements are necessary:

- Formation of a team
- Wildlife Manager, Veterinary Medical Officer, Range Forest Officer and Frontline Staff
- Training of veterinary medical staff in wildlife management and wildlife science
- Training of veterinary medical staff in restraint and immobilization of wildlife
- Education and training of frontline staff in biological attributes of species
- Field training in animal handling
- Skill enhancement in use of forestry implements

Dr. Malik then mentioned special training programs which can help in capacity building of department staff.

Training in wildlife restraint courses

- Attendance at the Wildlife Capture Course, Zimbabwe with one-week attachment at Veterinary Unit of Kruger National Park in South Africa and Hoedspruit Endangered Species Center located near Kruger National Park(03 Week3).Dr Chap Masterson, Director, Zimbabwe Wildlife Veterinary Trust, 58Arcturus Rd, Highlands, Harare, Zimbabwe. Cell:+263 77 486 1238 http://wildlifecaptureafrica.com
- Zoo, Exotic and Wild Animal Aesthesia(ZEWA) Course organized by Wildlife Pharmaceuticals/Tsavran Pharmaceuticals South Africa, 38 Wilken Street, Rocky Drift, White River, 1240, South Africa P.O. Box 2673, White River, 1240, South Africa. Email:admin@wildpharm.co.za Ph: +27 13 751 2328 135 JU Tipperary, Ngongoni Game Farm, TipperaryConservancy, Karino, Nelspruit,1204.+27(13)0071217sourcetreecourses@wildlifevets.net, https://www.wildlifevets.net/zewac.html

WII also conducts a course entitled "Interventions in wild animal health – Field Course". It will be conducted at Sariska Tiger Reserve in February 2020. Dr. Malik provided a state level organisational structure for wildlife veterinary services for better handling this task at field level.

Presentation 5 – Elephant Capture – Options and Obstacles – Dr. Parag Nigam, WII

Dr. Nigam gave different examples regarding elephant capture and the experiences learned in the process. An elephant was captured who came from Rajaji Tiger Reserve, upon releasing it into the tiger reserve, the animal again went back to the place of capture which was a human settlement outside the protected area. This showed that only capturing and releasing elephant isn't enough as elephants remember the routes they travel on and can return back. In North India, Kumki elephants are not used to drive these problematic elephants.

A detail on restraining devices used to capture elephants were given. The devices must take into account of basic elephant biology. The position into which an elephant is kept while capturing and transportation process is very crucial. Putting all the pressure near its breast region is not good for the animal as the restraining device can cause harm to the animal or even death in some cases. The vets should be properly trained in handling this task and be ready for any emergency situation. There should be a checklist of procedures and equipment to be used.

A well trained staff and adequate equipment along with transportation vehicles are necessary to have a successful elephant capture.

Discussion
Dr.Prachi Mehta put a question regarding way forward to deal with HEC in Chhattisgarh with special reference to mining activities in the state. Dr. R. K. Singh replied saying that development is necessary for the society. Also it is a political issue and interest driven activity. For conservation of wildlife and elephants, a well educated society is important to understand the complex issues of HEC and science alone is not enough to solve this issue.

Day 2 – Tuesday 2nd July

Working groups discussion

Three groups were formed to discuss following topics:
Working Group I – HEC – Analysis and way forward
Working Group II – Management (Interstate coordination)
Working Group III– Crisis situation: Handling elephants/drugs/capacity building of local vets

The discussion was held and a presentation was prepared for each group. The groups delivered their findings after the presentations by expert organisations

Technical Session III – Presentations by expert organisations

Presentation 1 – Dispersing elephants: Opportunities and challenges – Shri. Ajay Desai, WWF

Shri. Ajay explained details on how elephants disperse in a landscape and challenges people face in the process. Major reason behind dispersal is no forest for them to disperse to. Mostly younger males which are not mentored by adults tend to disperse more. Bulk of the makes are below the age of 20. They are forced to move though human use areas (overcome fear of such areas)and forced to live of crops (become habitual and obligatory raiders) andovercome fear of normal driving/scaring tactics. Therefore,for next generation this situation is natural and normal – they do not know what life is in a forest. Hence crop raiding is their normal behaviour. It needs to be considered that such dispersal of elephants will never stop as though forest is there, but suitable habitat for elephant is scarce. Elephants have scattered throughout the country comprising of different regional populations. Central Indian population is the fragile and population viability is crucial for survival of the species.

Shri. Ajay later explained use of physical barriers to stop the elephant movement. He stressed on proper construction of barriers keeping in mind elephant's behaviour. In Karnataka, they are using old rail fencing which is highly expensive costing up to Rs. 140 lakhs/km. Instead he suggested to use hanging fencing which cost around Rs. 2.5 lakhs/km and is a better option. The barriers should be placed at appropriate places especially at weak spots like water ways in a habitat. A report published by Karnataka Elephant Task Force described three zones as a mitigation strategy viz. Elephant only zones (inviolate space for elephants), co-existence zone (both people and elephants) and no elephant zone (areas where long-term elephant conservation is not possible and conflict is high). Such zonation can help the decision making process in long term conservation.

Habitat security and metapopulation management for preservation of genetic diversity is essential. Collaring of elephants should be done at the right time and not during musth period which can result into collar dropping incidences.

Presentation 2 –Community based management of elephant conflict in North Kanara District: An overview – Dr. Prachi Mehta, WRCS

Kali Tiger Reserve falls under North Kanara District where northern most elephant population in Western Ghats occur. It's a satellite population having around 70-80 individuals. The habitat is mostly forest area interspersed with farm lands near the fringes of the forest area. So there is a clear boundary between these two different habitats. The elephants here mostly stay inside the forest from February to August and venture outside to feed on crops during August to January. Paddy, banana and coconut are the major crops cultivated in this area.

Dr. Mehta and her team is working in this area and practicing Community-based Elephant Conflict Management (CBCM) which was initiated in the year 2010 and going on ever since. Basic principles of CBCM are as follows.

- Participatory model of conflict management
- Empowering farmers in crop protection
- Promotion of low cost tech and innovative crop protection measures
- Self sustaining with easily transferrable technology

Different types of deterrents are used to drive away the elephants which are as follows:

- Farm based deterrents – Night guarding
- Chilly based deterrents – use of chilly smoke
- Bee hive fencing – pot and log hives – also beneficial for honey production
- Device based deterrents – Trip alarm, flicker lights – low cost and effective

Such low cost measures are tested on try and work basis. Number of farmers using these innovative crop protection measures have increased over the years. Also success rate of all these measures is above 70% and hence proven effective in this region.

WRCS conducts workshop on hands on training n crop protection in different states for forest department staff, farmers, researchers and corporate companies. Local communities are also involved in providing incentives which also helps conservation. Production of handicrafts on theme of elephants, preparation of paper by using dung are some of the initiatives undertaken.

Presentation 3 – Mobile-mediated technology for human-elephant conflict mitigation – Shri. M. Ananda Kumar, NCF

Shri. Ananda Kumar explained HEC in Valparai and adjoining region in Tamil Nadu state. He focused on three contrasting landscapes viz. Valparai, Hasan-Kodlipet and Coimbatore Forest Division. Valparai has an area of 220 sq. km. and around 100-120 elephants use this habitat. There are 220 villages in Hassan. More number of human casualties were recorded from Coimbatore Forest Division followed by Valparai and Hassan-Kodlipet region. More than 50% of the deaths occurred on roads.

Creation of help lines and Rapid Response Team were some of the steps taken by Tamil Nadu and Karnataka Forest Department. Around 2000 alerts were issued everyday in around 148 villages in the region. People's response to alert calls increased and more people subscribed to these calls to get updates. 23 lives were saved from year 2003 to 2018 with the help of this alert system. To conclude the presentation, the simple and adaptable techniques will ensure better participation by people.

Presentation 4 - Human Elephant Interface- Conservation and conflict mitigation in Mahasamund and Balodabazar FD, Chhattisgarh - Wildlife SOS team

A brief history was given regarding elephant movement to the study area from Odisha. A baseline survey was conducted in this area with following objectives:

- To understand elephant movements & identify specific causative factors leading to Human-Elephant conflict

- Testing/using GPS collars as early warning alert system
- Capacity Building & Training for FD frontline staff
- Generate awareness among local communities
- Train people in conflict avoidance behaviour

In the study area where the team monitored HEC, it was found that crop damage was more than any other type of damage due to HEC. The team conducted radio collaring studies to monitor elephant movement. It was found that elephants move out of the forest during cropping season and move back to forest during non - cropping season which was evident that they preferred the crops for their dietary needs. MFP collections and forest fires caused negative effect on elephant movement. Forest fires made elephants to move out of the forest.
To reduce conflict, early warning system was devised. Alert messages were sent using WhatsApp applications along with Rapid Response Force of Chhattisgarh Forest Dept. Along with making people aware about elephant presence, capacity building and training programmes were organised for frontline staff and security forces. Similar programmes were also conducted for local communities.

Presentation 5 - Supporting the components of 'precision wildlife management - Shri. Aditya Gangadharan, IUCN

Following points were highlighted to conduct management practices efficiently:

- Identify potential conflict situation in space and real-time
- Characteristics of that situation (e.g., demography, behaviour of an elephant)
- Informing the right people
- Rapid response for that specific incident
- Ability to change all the above when circumstances change (nimbleness)

Shri.Gangadharan gave examples which were put forward by previous speakers and suggested how to deal with conflict situations. A software based programme can be used effectively. He showed a dashboard of such a software where all the data of HEC was plotted on a map and it was interactive giving all the details regarding each conflict case. The interface was easy to interpret and could also be used in the field over a mobile phone. Live elephant location update can also be shown in the software to make staff aware about elephant movement in their respective area.

Artificial intelligence (AI) software that can identify elephant from photos/videos will be helpful in the field. Free and open source platforms are good to be used by anyone. Applications can be used for early warning for conflict situations and avoiding train or road collisions.

The system works in a systematic way. Once the user upload a picture on the software, the AI identifies the data in real time. Based on the result, automatic alert is send to respective responsible authority. It alerts Forest Dept Rapid Response Team and also local communities. Such softwareare available and can be used anywhere where conflict is prevalent. Such system will surely help in minimising the HEC if not totally stop it.

Working group presentations

WG I - HEC – Analysis and way forward
Chair - Shri. B. K. Singh
Co-Chair - Dr. R. K. Singh

Causes -

1. Habitat loss (encroachment, diversion for development)
2. Fragmentation (corridors, linear infrastructure and decrease in habitat)
3. Degradation (Anthropogenic pressures and weeds)
4. Disturbance (mining, naxal activities)
5. Water availability
6. Barrier for free passage
7. Local culture and lifestyles

Nature of conflict -

- Regular or normal conflict at the interface of elephant habitat and human use area
- Dispersing elephants which have moved out of their natural habitat and are in search of new habitat (have different behavior where they have got habituated to crop raiding)
- Human errors (lack of capacity/awareness; local cultural practices) which exacerbates conflict

Suggested Solutions -

- Drivers/causes
    - Integrated land use planning and development
    - Cross sectoral cooperation in managing HEC (all line departments participate in this)
    - Improve livelihoods to reduce dependency on forests
    - Habitat improvement interventions (restoration)
    - Securing and restoring corridors
    - Central government policy and financial support for HWC

- Sustainable funding for Human Wildlife Conflict (HEC included) through HWC Fund. All those activities which cause elephants/other wildlife to disperse or cause conflict in their existing or new habitats

Preventive methods -

- Resettlements of vulnerable settlements
- Barriers
- Capacity building and awareness within local communities and amongst departmental staff
- Awareness building in line departments
- Population management (immuno-contraception)
- Early warning systems
- Rapid response unit (departmental and community)
- Increase PAs or consolidate PAs into larger unit
- Improve agricultural practices (value addition, alternate crops)
- Interstate crisis and mitigation management committee for cross border issues
- Proper safety tools for frontline staff
- More research on behavior of conflict animals
- Conflict database to help understand the larger conflict situations

Compensation -

- Improve in terms of delivery and value ex-gratia
- In case of death, handholding of affected families to ensure family stabilizes
- Improved insurance for staff involved in dangerous tasks (particularly daily wage workers)

WG II - Management (Interstate coordination)
Chair - Shri. M. S. Negi
Co-Chair - Shri. Rajiv Shrivastava

Issues -

- Frequent cross border movement of elephants
- Clear understanding of home State
- Stay pattern varies according to season, terrain
- Identify passages across borders
- First tendency is to prevent entry of herds in respective State
- GoI has already given Guidelines for Interstate Coordination
- But still remains at personal level

Good practices in each state -

- Each State knows the entry / exit points
- WhatsApp Group within Divisions
- SMS Alerts
- Radio Broadcast
- Elephant Dossiers, linking to clan behaviour

Recommendations -

- Map the Home Range and movement in time / season.
- Allow migration but prevent dispersal.
- Exchange Phone numbers of adjoining Divisions, make a WhatsApp Group across borders
- Do not stop movement of herds across borders. Try to facilitate smooth passage with appropriate warnings
- Sharing information of exit from one State to the neighbour at Division / Range level.
- At least monthly meeting at Division / Range during migration / dispersal.
- Bi-annual meeting of Interstate Committee, with submission of summary records to MOEF& CC.
- To handled the HEC in area where high HEC, presence of Mahout's and Veterinarians are required, therefore, it is required to fill the vacancy of mahout and vet in these areas.
- Also opening of the training centre for these mahout is essential, the state like Assam, WB, Karnataka and Kerala may imitate the training centre for mahouts, so that, the vacancy can be filled with trained mahouts.

Responsibility -

- **GoI**
  - Make SOP with all element given under "Recommendations"
  - List of Border Divisions / Ranges
  - Home Range of the elephant population, Loners
  - Capacity building for HEC management
- **States**
  - Give all above data in specified timeframe
  - Share expertise across borders

Data needed -

- Nodal Office for each State
- Entry / Exit Points with neighbour
- Periodicity in time and season
- List of Division / Range for above, maybe villages also
- Contact phones, emails
- List of expertise available, facilities that can be loaned on request

- **It was suggested to give these detailsto GoI within 10 days from the date of the workshop**

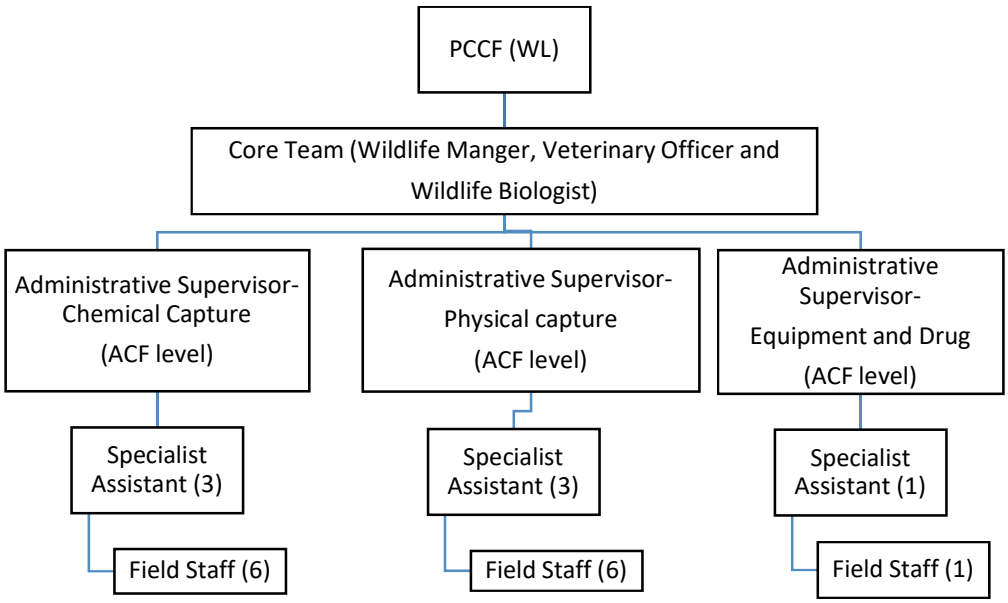
WG III – CrisisSituation: Handling elephants/drugs/capacity building of local vets

Chair - Shri. Hari Kumar
Co-Chair - Dr. P. K. Malik

Interventions are required for management of an elephant/herd in distress or where there is possibility of human damage and property and interalia risk involved with safety of elephants. There are 2 major components of crisis management which are human resources and infrastructure.

Human Resources (HRD)

Specialized forcecomprising of manager, biologist, veterinarian for resolving crisis situations is important. Specialized trainings must be ensured to all team members.
The team presented an organisational structure which is as follows.



- Have a separate cadre of vets.
- Vehicle for transportation of team as well as animal translocation should be ready.
- Tool kit should be readily available.
- Equipment for physical and chemical capture should be readily available and maintained.
- Procurement of etorphine is difficult. The process of needs to be streamlined.
- Interstate cooperation for sharing resources (human as well as equipment) has to be institutionalized.

Physical infrastructure

- Well designed space for equipment and similar resources at a vantage station
- Well designed vehicles for transportation of animals
- Field vehicles for transportation of team and equipment
- Other equipment and implements should be kept ready

Training

Who requires training:

- Administrative Supervisors/Specialist Assistants/Field Staff
- Wildlife managers and Veterinary officers
- Forest Guards will require specialized training for their type of expertise.

- Training of trainers

Who imparts training:

- Various specialized organizations/agencies such as WII, Wildlife Trust of India (WTI), Wildlife SOS (Agra) and any other agency.

Courses existing - In Country

- Diploma course in WII- WL Managers and Veterinarians
- Locally designed training modules should be prepared as per the requirement in the area.

Courses in Physical and Chemical Capture/ Rescue and Rehabilitation International

- Wildlife capture course in Zimbabwe
- Wildlife pharmaceutical course in South Africa
- Collaborative association training, the best place is Kruger NP/ South African Parks/Kenya for 6 months.
- Courses in Captive Management – Large North American/S. African zoos (Min 6 months)

Other recommendations

- Mock drill should be done.
- Knowledge and skill enhancement in occupational hazards
- Orientation of local communities.
- Orientation on crowd management is important
- Orientation of media in forest areas. Media sensitization workshops.
- Training and awareness for Police, Panchayats, local people, revenue dept. etc.
- Immediate payment of ex-gratia on field should be focused.
- Development of basic guidelines on handling crisis situations
- Education and communication with local communities

Concluding Ceremony

Chief Guest - Shri. Mohamad Akbar, Hon'ble Minister of Forest, Chhattisgarh Govt.

Shri. Rakesh Chaturvedi, PCCF, CGFD welcomed and introduced Hon'ble Minister of Forest Shri. Mohamad Akbar to all workshop participants. Shri. M. S. Negi provided brief details of the workshop and CPEMC meeting held at Ambikapur. The field visit was successful and the team members visited elephant affected villages and interacted with villagers. He mentioned that inter-state communication is essential to get updates on elephant movement. Requirement of mahaut is needed for Kumki elephants housed at rescue centre in Pingla.

Shri. R. K. Shrivastava explained that around 400-500 people are killed every year in the country. There are a total of 4 elephant populations viz. North, South, North East and Central East. About 10% elephant population is found in Central East region which is responsible for 45% of human casualties. To deal with HEC, a Strategic Action Plan is needed specifically for this region. So far 213 meetings have been conducted in this regard and findings of this workshop can be added to the action plan.

Dr. P. K. Malik stated that a discussion is necessary to come up with inter-state solution. He asked for support from Shri. Akbar so that Chhattisgarh state can become an example in taking forward HEC mitigation in the country. Capacity development is of utmost importance as HEC procedures are very time consuming and everyone should be well trained to handle HEC.

Shri. Mohamad Akbar explained the financial resources of the Chhattisgarh state. He mentioned that the state has low financial resources. He promised to work hard to get the finance to support HEC issue. He gave information regarding notification of Lemru Elephant Reserve. For 15 years, Lemru was not declared due to some issues regarding coal mining in the said area. But in order to save elephants, it is important that elephants are made the first priority. In the end, he once again assured to provide support and financial requirement to better deal with HEC in Chhattisgarh state.

Shri.Atul Shukla, PCCF (WL) provided vote of thanks. He thanked all Chief Guests, experts from institutions and organisations, forest department officers and staff.

The workshop was concluded with a group photo session.

Workshop Findings

- The Standard Operating Procedure (SOP) for Human-Elephant Conflict should be prepared for ensuring smooth, prompt and effective exchange of information between the officers of the bordering States to track the movement of elephants. The major objective of the Standard Operating Procedure will be to ensure delivery of information in advance from the officers of the State from where the elephants are moving to the officers and the public of the States where these elephants are entering. The SOP should have the provision for regular periodical meetings between officers of the two States at different levels from the Chief Wild Life Warden to the Divisional Forest Officers and Range Officers of the bordering divisions/ranges of the two States. (**Action:PE Division,State FDs)**
- The State Government of Madhya Pradesh and Chhattisgarh in consultation with Ministry of Environment Forest & Climate Change shall strive for creating a larger elephant landscape involving the Protected Areas like Guru Ghasidas Wildlife Sanctuary in Chhattisgarh and Sanjay Tiger Reserves in Madhya Pradesh and adjoining forest areas so as to contain the dispersal of elephants in human dominated areas. (**Action:Chhattisgarh and Madhya Pradesh FDs)**
- Identification of Elephant Corridor and animal crossing points across the linear infrastructures passing through the PAs and these corridors to better understand

movement patterns and apply mitigation measures to reduce HEC. Declaration of identified corridor as well as animal crossing points across the linear infrastructures passing though these PAs and corridors is crucial. (**Action:PE Division,State FDs)**

- Interstate committee is of utmost importance to deal effectively with HEC issues, prevailing in the region. The Ministry should urgently issue a notification creating Inter State Committee for the region (State level) comprising of ADG (WL), IGF (PE) and CWLWs of the region. The notification should describe mode of operation of the Committee including periodicity, quorum of the meeting, intersectoral linkages etc. Decisions taken during the meetings should be communicated to the Project elephant Division, which should keep track of its implementation. (**Action: PE Division)**
- Inter State Committees (District level) should be established at interstate boundaries through which elephants cross into other state. DFOs and PA managers should be primary members of the committee. It may also include representatives of the elephant depredation and local NGOs. The Committee will monitor day to day movement of elephants during elephant migration and standardize system of alerts and tackling of conflict situations. PE Division should seek inputs from CWLWs of the region like location of animal crossing points (interstate), proposed members of the committee, linkages with CWLWs/PE Division etc. and issue necessary notification. CWLWs should provide requisite information in time bound manner. For purpose of convenience, a Nodal officer may be appointed for this purpose in the office of each CWLW. (**Action: PE Division and CWLWs)**
- District level committee needs to be established having members of related stakeholders like district administration, railways, roads and linear infrastructure dept., animal husbandry dept., etc. to deal with HEC effectively. (**Action:State FDs)**
- The State Governments of Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and West Bengal should establish the divisional human-elephant conflict management teams in the divisions having problem with higher instances of HEC. Such teams should necessarily include sufficient number of trained kunki elephants to control wild elephants, the trained mahavats and veterinary officers/compounders/assistants. (**Action:State FDs)**
- Posts of permanent veterinarians and mahavat should be created in elephant affected areas for better dealing with emergency situations. Provision of adequate equipment and regular training of vets at District level should be imparted for capture and tranquilization of elephants. (**Action:State FDs)**
- The mahavat training schools should be established in states like Tamil Nadu, West Bengal, Assam etc. So that the traditional expertise of the mahavats available in these states can be used to create a force of trained mahavats to handle kunki elephants and the wild elephants involved in the conflict.
- The State FDs should explore the feasibility for establishing elephant rescue and rehabilitation areas/centres involving larger landscape where the rescued elephants can be kept in their near natural environment and submit proposals to the Ministry/CZA.
- Timely procurement of tranquilizing drugs and their antidote is extremely important for effective handling of HEC incidents. There is a need to establish a system of procurement of tranquilising drugs through Wildlife Institute of India. PE Division will take suitable steps in consultation with CWLWs and WII. (**Action: PE Division, WII and CWLWs**)
- A common compensation policy may be established throughout East Central Region states.(**Action:State FDs)**

- State Governments should expedite the relocation of villages which are residing inside or near elephant corridor and common observed movement paths. (**Action:State FDs)**
- Alternate cropping should be encouraged among villagers such as plantation of lemon grass cultivation around villages as it is effective in driving elephants away. State Governments should handhold the communities in adopting the alternate cropping. (**Action:State FDs)**
- Use of low cost methods using local materials should be promoted to reduce crop depredation by elephants. WCRS, Pune based institution, has done extensive work in this area. Its services may be required to train frontline field staff and villagers in these techniques. Villagers may be persuaded to take cultivation of crops, which are not relished by elephants and other wildlife. (**Action: PE Division, CWLWs and WRCS)**
- New and proven technologies and innovative methods for control of HEC e.g. use of drones, satellite tracking of radio collared elephants, mobile and hanging fences, alternate cropping methods, rapid Response Teams, Advance Alerts etc. should be encouraged. (**Action: PE Division and CWLWs)**
- Capacity building of departmental staff on Hands on training to staff to learn new techniques and methods. (**Action:PE Division,State FDs)**

APPENDIX I - Workshop Agenda

1st JULY 2019 (Monday)

Inuagural Session	
9:00 -9:30	Registration of Participants
9:30 - 9:40	Welcome address by Shri Noyalthomas, IGF (PE), MoEF&CC
9:40 - 9:50	Address by Shri RC, PCCF (HoFF), Chhattisgarh
9:40 - 10:05	Keynote address by Shri M.S.Negi, ADG (WL), MoEF&CC
10:05 - 10:20	
10:20 - 10:25	Launch of Identification Manual of Wild Elephants of Northern Chhattiagarh
10:25 - 10:30	Vote of Thanks by Shri. R.K. Shrivastava
10:30-11:00	**Tea Break**
Technical Session I	Conflict
11:00 - 11:15	Presentation on Human Elephant Conflict in Chhattisgarh by Shri J.AC.S.Rao, APCCF (WL), CG
11:15- 12:30	Presentation by CWLWs of East Central Elephant Range States (Odisha, West Bengal, Jharkhand, Bihar & Madhya Pradesh)
12:30- 1:30	Discussion on mitigation of HEC issues of East Central Region
1:30 - 2:30	**Lunch**
Technical Session II	Monitoring
2:30- 3:00	Presentation by BivashPandav/Laxminarayan (WII)
3:00-3:20	Presentation by S.S.Bist
3:20 - 3:30	Discussions
3:30 - 3:45	Presentation by IGF(PE),MoEF&CC on HEC issues in the country - An Overview
3:45- 4:00	**Tea Break**
4:00 - 4:20	Presentation by Dr. P.K.Malik - Process involved in equipment and drug procurement
4:20 - 4:30	Discussions
4:30 -5:30	Presentation by Dr. Parag Nigam: Elephant capture- Options and Obstacles
5:30 - 5:45	Formation of two working groups:
	Working Group I: Analysis of the causes of HEC in the region and nature of the conflicts - Ways and means of addressing HEC in East Central Region
	Working Group II: Management issues relating to Budget, staff shortage and logistics etc.
2nd JULY 2019 (Tuesday)	
Technical Session III	Role of Civil Societies
9:30 - 11:00	Deliberations by working groups and finalization of their Recommendations
11:00- 11:15	**Tea Break**

11:15 - 11:35	Presentation on "Managing Dispersing elephant populations - Challenges and opportunities" by Ajay A Desai
11:35- 11:45	Discussion
11:45 - 12:05	Presentation on "Preventing Crop Damage by Elephants through Community-based Conflict Management Model (CBSM)" by Prachi Mehta, WRCS
12:05 - 12:15	Discussion
12:15 - 12:35	Presentation on "Use of Mobile Technology in Conflict Management" by Anand Kumar, NCF
12:35 - 12:45	Discussion
12:45 - 1:00	Corridors in East Central Landscape and its Protection by WTI
1:00 - 2:00	**Lunch**
Technical Session IV	
2:00 - 3:00	Presentation on Best Practices by States
3:00 - 3:15	Presentation of recommendations by Working Group I and discussions
3:15 - 3:30	Presentation of recommendations by Working Group II and discussions
3:30 - 3:45	**Tea Break**
Concluding Session	
3:45 - 4:30	Finalization and adoption of recommendation of Working Group I & II
4:30 - 5:00	Address by the Chief Guest (Hon'ble Minister of Forest/Additional Chief Secretary (Forest)
5:00 - 5:15	Vote of Thanks by Chhattisgarh Forest Department

APPENDIX II - List of Working Group members

WG-I	WG-II	WG-III
HEC - Analysis and Wayforward **Venue : SCH, Second Floor** **Time : 9.00 am**	**Management (Interstate Coordination)** **Venue : TCH, Third Floor** **Time : 9.00 am**	**Crisis Situation: handling of elephants/drugs/capacity building of local vets** **Venue : FR-19 Conference Hall, First Floor** **Time : 9.00 am**
Shri. B. K. Singh (C)	Shri.M.S.Negi (C)	Shri.Harikumar (C)
Dr. R. K Singh (CC)	Shri. Rajeev Shrivastava (CC)	Dr. P. K. Malik (CC)
Shri. Ajay Desai	Shri. JACS Rao	Dr. Parag Nigam
Dr. AJT Johnsingh	Shri. R. K. Shrivastava	Shri.Arun A. Sha
Dr. Bivashpandav (WII)	Shri.Venkatachelam Sir	Mrs. Prajna Panda
Shri.Anand Kumar	Shri. K. K. Bisen	Shri. B. AnandBabu
Shri. N. K. Vasu	Shri. P. K. Varma	Dr. Pranay Mishra
Shri.SehKazmi	Shri. J. S. Chauhan	Shri.KartickSatyanarayan
Shri. Jayant Kulkarni WRCS	Shri.Sanjai Mohan	
Dr. Prachi Mehta	Dr. MutamizhSelvan	
Shri.Swaminathan	Dr. S. K. Singh	
Dr. Sandeep Tiwari	Shri. R. K. Sinha	
Shri.Kaushlendra Kumar		
Shri.SurendraVerma		

APPENDIX III - List of Workshop Participants

S.No.	Name	Designation/Office	E-mail	Mobile
1	Neha Samuel, Durg	Wildlife		9425544223
2	Shri Pranay Mishra	DFO Dharamjaigarh		7692079151
3	Shri S.S Kanwar	CF, Elephant Reserve, Sarguja		9479032508
4	Shri V. Ramarao	APCCF, Raipur		9425558546
5	Smt. Sanjeeta Gupta	CCF, Raipur		7999524300
6	Shri Vishwesh Kumar Jha	DFO Balodabazar		9425268895
7	Shri Rajendra Mishra	WTI		9424241900
8	Ms. Meetu Gupta	Conservation Core Society		9424140207
9	Shri V.S Rao	CEO- Campa		
10	Shri P.V Narsinga Rao	APCCF , HQ		9425252180
11	Shri Upendra Kumar Dubey	WWF - India		9907476613
12	Shri H.L Ratre	CCF,Bilaspur		9425507222
13	Shri Yunus Ali	APCCF (HRDIT)		9893200462
14	Shri AnupShrivastava	APCCF (Bamboo Mission)		9993030804
15	Shri AishwaryChandrakar	SDOP SitapurSarguja		9479193504
16	Shri VivekanandJha	DFO Balrapmpur		7587301686
17	Shri Narendra Pandey	CF, Protection		9425261135
18	Shri S. Venkatachalam	DFO Korba		9425268680
19	Shri Abhay Kumar Shrivastava	CF, O/o PCCF, CG Raipur		7587070694
20	Shri R.K Rayast	DD, USTR		7693093324
21	Shri P.C. Pandey	APCCF (Protection)		9926153203
22	Shri Debashish Banerjee	CCF (W.P)		9425565143
23	Shri D.S Diwan	D.S.P Korba		9425522215
24	Shri P.K. Keshar	FD, ATR		7587012900
25	Shri Ankit Kumar	WII, Dehradun		9458509061
26	Shri Jayjit Das	WII, Dehradun		8100033696
27	Shri N. Lakshminarayan	WII, Dehradun		9445779042
28	Shri Anurag Srivastava	CF (CAMPA), AranyaBhawan		9424258701
29	Shri Vincent Rahim	CCF & FD Sanjay Tiger Reserve, Sidhi, MP		9424793668
30	Shri Prabhat Dubey	Forest Ambikapur		9826443763
31	Shri Pradeep Malik	Snr. Prof. WII		9412998113
32	Shri Parag Nigam	Scientist - WII		9412374486
33	Shri BivashPandav	Scientist - WII		9412057152

34	Shri KartickSatyanarayan	CEO- Wildlife SOS		9810114563
35	Shri R.B.P. Sinha	APCCF (W.P)		9425234749
36	Dr. A. ShaArun	Wildlife Veterinarian, Wildlife SOS		9980145785
37	Shri S.P Yadav	CCF, West Bengal		9903237100
38	Dr. Basavaraj SH	West Bengal		7407261851
39	Shri P.K. Sahoo	Odisha		9777083085
40	Shri Ajay A. Desai	Consultant, WWF		8880807325
41	Shri SubhashPuranik	ACF, Sawantwadi,MH		9422055146
42	Shri Sandeep Kr. Tiwari	WTI		9888274180
43	Shri M. Ananda Kumar	NCF		9443683514
44	Shri Aditya Gangadharan	IUCN		7400453023
45	Shri Bhakta PadarbindaRath	Odisha FD		9040207519
46	Shri I. Sengupta	S.T.S (MP)		8972845552
47	Shri VivekSaxena	Country Representative, IUCN		9999295320
48	Shri B.P. Singh	DFO Surajpur		9644565780
49	Shri Sudhir Agrawal	APCCF (A/G)		
50	Shri Hemant Kashyap	Jagdalpur		9407616707
51	Shri SundeepBalaga	DFO Bilaspur	dfo-bsp@rediffmail.com	8919706470
52	Shri ShriKrishnaJadhav	DFO Jashpur	shri.ifs2014@gmail.com	7587015800
53	Shri M.K Pandey	DFO Raigarh		9868301946
54	Smt. Priyanka Pandey	DFO Surguja		7587015300
55	Shri A.K Biswas	CCF (Production)		9425833066
56	Shri U.K. Gupta	DFO Raipur		9424232091
57	Shri A.K Maheshwari	ADEN/11/R		9752877209
58	Shri A.B Minz	CCF Sarguja		9425254875
59	Shri F. Toppo	DFO Mungeli		8839771721
60	Shri Kumar Nishant	SDO Rajnandgaon		7906967368
61	Shri Pankaj K. Kamal	SDO W. Kapsi		7827815730
62	Shri J.S Chauhan	APCCF (WL) M.P.		9425303604
63	Shri R.P Singh	EX- APCCF & Wildlife Expert, M.P.		7354425776
64	Shri N.K. Vasu	PCCF & HOFF (Retd.), Assam		9588865429
65	Shri R.K Srivastava	Consultant, MOEFCC		9711419959
66	Shri Amalendu K. Mishra	Ambikapur	amalendu.mishra@gmail.com	9425266591
67	Shri Aminuddin	USTR	ccfwlrpr@gmail.com	9993893863
68	Shri Surendra Varma	ANCF	surendrav@alumni.cisc.ac.in	8065324304
69	Ms. Antara	Wildlife SOS	antara@wildlifesos.org	8334828885

	Chakrabarty			
70	Shri S. Swaminathan	Wildlife SOS	swaminathan@wildlifesos.org	7259039953
71	SmtUmadevi B.V	APCCF/CGVYAPAM		
72	Dr. R.K. Singh	Ex-PCCF, CG.	ravi.ksingh.ifs@gmail.com	9818888083
73	Shri Kaushlendra Singh	Ex-PCCF(WL), CG	kaushlendrasinghccf1@yahoo.co.in	9425220158
74	Dr. S.K. Singh	APCCF (Production)	skhisk@yahoo.com	9425203495
75	Dr. Rajeev K. Srivastava	Ex-PCCF Tamilnadu	srivastavaraj3@yahoo.com	7338853888
76	Shri M.S. Negi	ADG Wildlife, MOEFCC	adgwl-mef@nic.in	8860505024
77	Shri S.I. ManojNavrange	Asst. Balrampur	kumarmanoj310584@gmail.com	9424280218
78	Dr. K.M. Selvan			8610032757
79	Miss SailajaNayak	SRF,AranyaBhavan	nayak.sailaja@gmail.com	7727988298
80	Mr. Naveen M	SRF,AranyaBhavan	naveenwildlife@gmail.com	9009879523
81	Mr. Ashish Kambale	SRF,AranyaBhavan	akhornbill@gmail.com	9575062133