



Training GAP analysis of wildlife law enforcement agencies in Himachal Pradesh

March 2020

NO.	CONTENTS	PAGE NO.
	List of Tables	iii
	List of Annexures	iii
	Acknowledgement	iv
	Executive summary	v
I	Introduction	1
II	Objective	2
III	Study area	3
IV	Method	4
V	Results and Discussion	5
i	Stakeholder meetings	5
ii	Curriculum analysis	5
a	Range Forest Officer	5
b	Forest Guard	9
c.	Senior Forest Officers	11
c	Other enforcement agencies	12
iii	Agencies/Institutions as mentor for anti-poaching module.	14
VI	Conclusion and Recommendation	16
a	Range Forest Officer	16
b	Forest Guard	23
c.	Senior Forest Officers	29
d	Other enforcement agencies	31
VII	Reference	32
	Annexure	34

LIST OF TABLES

Table 1	Redundant topics within the existing syllabus of the Range Forest Officer.
Table 2	Topics of substitution in place of less important topics in the existing syllabus.
Table 3	Anti-poaching module with topics for Range Forest Officers.
Table 4	Identification of topics in the existing syllabus for the Forest Guards.
Table 5	Substitute topics for insertion in the existing syllabus after removal of redundant topics.
Table 6	Anti-poaching modules for Forest guards.
Table 7	Topics suggested for Senior Forest Officers
Table 8	List of modules for Police Officers with indicated topics of relevance to wildlife crime
Table 9	List of modules for Custom Officers with indicated topics of relevance to wildlife crime
Table 10	List of agencies/institutions/non-government organization which can facilitate in undertaking suggested topics of insertion in the present curriculum.
Table 11	Key competencies for building institutional and individual capacity to prevent wildlife crime and illegal wildlife trade in Range Forest Officer.
Table 12	Key competencies for building institutional and individual capacity to prevent wildlife crime and illegal wildlife trade in Forest Guard.

LIST OF ANNEXURES

Annexure I	Roles and responsibility of incumbent officer in the Himachal Pradesh Forest Department
Annexure II	Anti-poaching guidelines for Rangers
Annexure III	Existing syllabus of Range Forest Officer
Annexure IV	Existing syllabus of Forest Guard
Annexure V	Human rights

ACKNOWLEDGEMENT

TRAFFIC India would like to thank the Government of India, Ministry of Environment, Forest and Climate Change (MoEFCC), Global Environment Facility (GEF), United Nations of India (UNDP), Himachal Pradesh Forest Department and WWF-India, for their constant support, guidance and the grant to undertake this work.

We would like to thank Dr. Savita IFS, PCCF cum CWLW and Shri. Anil Thakur, IFS, CCF- Wildlife for their support and guidance.

We are extremely thankful to Dr Ruchi Pant, UNDP- India, Mr. Parth Joshi, Mr Manoj Thakur, State Project Officer, and all other team members of UNDP SECURE Himalaya Project for their support.

Also, a heartfelt thanks to the Police Department of Himachal Pradesh, Indo-Tibetan Border Police, Border Road Development Organisation for their time and suggestions during meetings.

EXECUTIVE SUMMARY

Wildlife crime and illegal trade is a growing concern exacerbated by ongoing globalisation that has far reaching serious ecological implications. In recent times there has been an increase of wildlife crime offenses in the state of Himachal, which has also seen it been highly organised. Himachal Pradesh has transborder with Tiber Autonomous Region in the eastern region and interstate open borders with Ladakh Union Territory, Jammu Union Territory in the north and northwest, Punjab and Chandigarh Union territory in South, Uttarakhand state in the south-eastern poses a challenge to the state Forest Department and disproportional large threat to the biodiversity of the state. Hence it is essential for the state to be well prepared and acquainted in all the aspects related to wildlife crime such as prevention, detection and investigation for reconsidering and intensifying the efforts to combat the same.

The present study was conducted to assess the current training curriculum for its suitability to equip the frontline staff from the Forest Department, Police Department and ITBP and to carry out anti-poaching and combating wildlife crime and trade operations in the state and across international and interstate boundaries. It is also assessed to see how the current curriculum can be fine-tuned to make it more focused on these activities.

Suggestions in the study are in two forms. Topics which were found redundant or outdated in present conditions, have been prescribed either for removal or rescheduling of time allotted, while topics which are of greater importance in present scenario have been suggested to be added to the existing module.

While, making these prescriptions care has been taken to keep the overall training period, the current timeline of course works and how the existing not so relevant topics can be replaced with a stronger anti-poaching module without disturbing the overall time frame of the training.

For Range Forest Officer training, suggestions are mostly focused on increasing time for use of technologies, forest laws and policies and individual mental and physical strength. These were somehow found to be not being given enough coverage in the current syllabus.

For Forest Guard, it was noted that the total duration for training is very short and less emphasis has been provided on the practical classes. Hence, for this course, the recommendation includes great emphasis on practical classes of the newly suggested topics and on greater emphasis to various anti-poaching module.

With changing focus of conservation and increasing involvement of communities it is also very important that enough focus should also be given to the human right issues. This has not been covered sufficiently in the current syllabus; hence, it has been hence recommended to include this topic in the mainstream course curriculum.

Additionally, the study has not been left at the level of only identifying the GAPS in the current syllabus and suggesting the changes, but a guidance for the new course syllabus with the additional topics has also been advised, based on the best curriculum being used at the international levels. Also, for the additional topics suggested for inclusion, the concerned agencies who can help in delivery of these subjects have also been identified to facilitate the work of training schools.

I. INTRODUCTION

An estimated one million plant and animal species are threatened with extinction, many within decades, where human activities have been attributed driving this extinction (IPBES 2019). These rates of extinction are nearly thousand times the existing natural rate of extinction and it is predicted that even more species will be targeted as substitutes for existing species which are in wildlife trade (Brett *et al.*, 2019). Market demand drivers are one factor considered responsible for the increasing wildlife species whether it be for wildlife parts, products or derivatives which are traded as commodities for eg; food, pets, skins, medicine, trophies and ornaments. It is estimated that the illegal trade for wildlife is nearly 20 billion dollars excluding timber and marine fish species (UNODC 2016) and has transnational activity and is organised just like other transnational organised crime (Doha Declaration 2015). While, there are existing instruments of trade regulation both at the international level such as CITES and at the national level such as Export Import (EXIM) Policy to reduce illegal transboundary trade of wildlife products and the Wildlife Protection Act-1972, their true potential can be realised only when they are implemented together. If the international and national policies are not properly harmonised and implemented by the law enforcement agencies (LEA) they inadvertently increase potential for illegality of trade within a species (Santos *et al.*, 2011). Also, having policies alone may not be enough for reducing wildlife crime and illegal wildlife trade unless there is effective implementation mechanism along with commensurate penalties and an effective demand reduction campaign targeting business, markets, and consumer mindset (Holden *et al.*, 2018).

Protected Areas (PA) are being realised as a cornerstone component of species conservation strategies, but the true realisation of the species conservation is the integration of the PA strategy into the wider landscape, and into the concerns of the wider society, (Ervin *et al.*, 2010) where species can travel and migrate across the habitats while achieving the goals of the PA will depend on how and by whom management decisions are being made and implemented. Also, attention to transparent and accountable decision-making may promote more effective conservation measures, adaptive management, and timely and adequate responses to changing conditions (Appleton 2016). For this to be realised, an effective wildlife law enforcement that serves as a deterrent is required which not only includes effective detection (Leader-Williams and Milner-Gulland 1993), intelligence gathering (Linkie *et al.*, 2015), and implementation of legal policies but also an effective criminal justice system (Challender and MacMillan 2014), where ideally poaching should be checked before initiation or at the site level. This requires effective anti-poaching strategies to be implemented by dedicated law enforcement personnel *i.e.* well-trained enforcement officials with resources and equipment to face well-armed poachers. This is essential for deterrence, interdiction, interception and in the worst-case scenario having to secure a crime scene. To complement these efforts, enforcement officials will also need to work alongside local communities who are the eyes and ears on the ground and can provide valuable information for investigations (Skinner *et al.*, 2018).

In India, the Forest Department has a well-defined organizational structure where in each state it has its setup which extend to the grass-root level. There are field level officers and senior officers at the state headquarters. The highest ranking officers in the field are the Divisional Forest Officer (DFO), who is assisted by Assistant Conservator of Forest (ACF), who is further assisted by Range Forest Officer (RFO) who manages the territorial unit known as a 'Range'. Under the RFO comes Deputy Ranger (DR) who are then assisted by Forest Guards (FG). The Forest Guard has his/her jurisdiction extending over the smallest unit of forest administration called a 'beat'. A brief account of the various positions is given in Annexure I.

TRAINING GAP ANALYSIS HIMACHAL PRADESH

One of the most important aspect of ensuring a better protection regime in a state is trained cadre of field officers, mainly the lowest functionaries like Deputy Rangers and Forest Guards.

Since an efficient and always improving forest governance is at the heart of effective conservation regime, it is prudent that the existing training curriculum and modules used at the Forestry Training Colleges are analysed in view of competences towards tackling wildlife crime and illegal wildlife trade through anti-poaching and anti-trafficking measures. Competence is the proven ability to perform a task or do a job, widely defined in terms of the combination of required skills, knowledge, and attitude (henceforth SKA). Increasingly, organisations are setting occupational standards required to be proficient in the profession/job and if gaps are found then required improvement are suggested through programs or training for enhancing capacities to implement and be professional in the incumbent position (Appleton 2016; Lotter *et al.*, 2016).

An 'occupational standard' can be described as 'the knowledge and competencies required to successfully perform work-related functions within a particular occupation'. Such standards usually define some or all following listed points:

- ❖ The specific tasks required for the job (what a person should be able to do);
- ❖ The variables associated with the task and range of conditions under which the person should be able to demonstrate competence (sometimes referred to as the 'scope' or 'range statement')
- ❖ The knowledge and understanding required for the person to be competent.
- ❖ The associated behaviour and attitudes necessary for the incumbent to be competent
- ❖ The ways in which competence can be objectively judged and certified; and
- ❖ The minimum amount of formal study required to reach the standard.

This would mean that the Forest Officials at the field level such as the Forest Guard and Block Officer having defined roles under the WPA -1972 have the required knowledge and skills to carry out their duties of addressing issues of wildlife crime and formulating strategies to tackle wildlife crime and illegal wildlife trade along with multiple roles, responsibilities and duties which the incumbent needs to perform as part of the job. Further, the challenges vary with diverse landscape and the team at hand. Hence, an attempt was made to objectively analyse the current training modules for Range Forest Officers and Forest Guards in the state to identify the GAPS in the training programme vis a vis what is required. The analysis was done with the following objectives:

II. OBJECTIVES

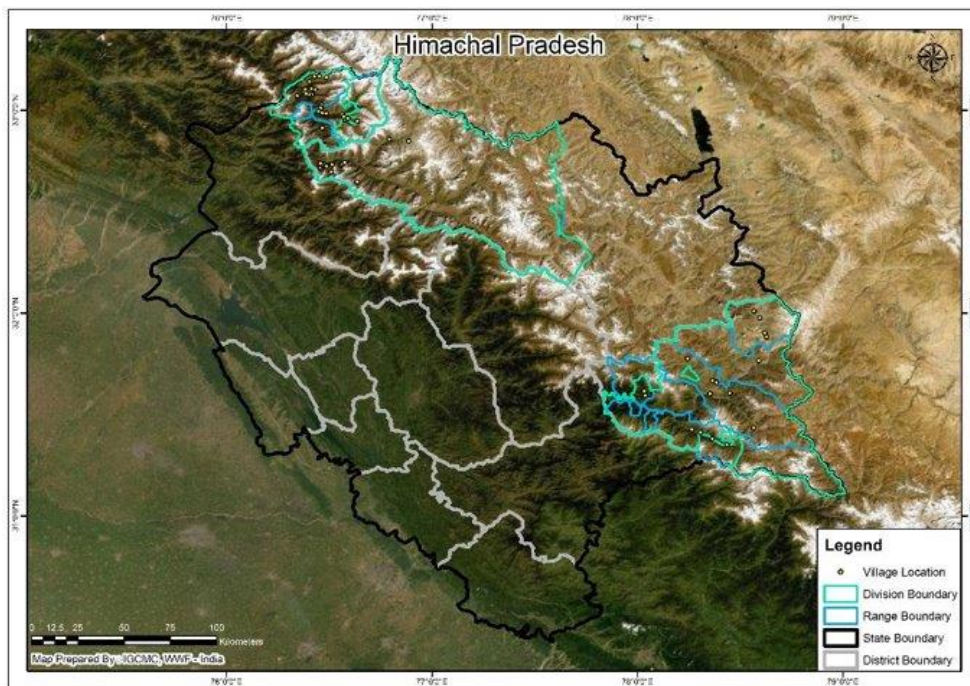
1. To assess whether the present curriculum for the Forest Department covers the critical sections of anti-poaching strategies and need assessment for other law enforcement agencies (LEA) such as Police, Para-military (ITBP), Customs, Revenue Intelligence, and CISF.
2. To suggest appropriate modules to strengthen anti-poaching capacity building, if any lacunae are found within the current syllabus of the Forest Department and requirements for LEA.

III. STUDY AREA

Himachal Pradesh state is an intricate mosaic of numerous mountain ranges and includes part of Trans-Himalaya and Northwest Himalaya and covers 10.43 % of the total geographical area of Indian Himalayan Region (ENVIS, 2019). In the east, it forms international boundary with Tibet, while in the north it is bordered by union territories of Jammu and Kashmir and Ladakh, Punjab state on the west, Haryana state on the southwest and Uttarakhand state on the southeast. The natural vegetation is divided into tropical, sub-tropical, temperate, and alpine zones. The latitudinal sprawl, altitudinal extent, as well as climatic and pedological conditions of Himachal Pradesh has resulted into diversified flora and fauna.

According to Forest Survey of India (2019), the Forest Cover in the State is 15,433.52 sq km which is 27.72% of the State's geographical area. As per the Champion & Seth Classification of Forest Types (1968), the forests in Himachal Pradesh belong to eight type groups which are further divided into 39 Forest Types. The state is well endowed with natural vegetation ranging from the lush green summer pastures to evergreen conifers in the high altitudes and from scrub forests of the foothills to the deciduous forests on the southern slopes of Shiwaliks and lesser Himalaya (Negi, 2002). It is also bestowed with distinctive animal diversity and known to conserve the endemic and threatened fauna because of varied landscape features which is the habitat of diverse flora from tropical to alpine. The protected area network comprises of 5 national parks, 28 wildlife sanctuaries and 3 conservation reserves in the state, which cover 15.10 % of geographical area of the State. Sites of conservation importance include 1 biosphere reserve and 3 RAMSAR wetland sites. The State is administratively managed through 37 Territorial Divisions and 6 Wildlife Divisions of the Himachal Pradesh Forest Department.

The study area for the objectives mentioned above covers the entire state of Himachal Pradesh as it targets the module used for training of the Forest Department staffs of Himachal Pradesh.



Map: State of Himachal Pradesh with demarcation of districts (grey border) and project site (blue border)

IV. METHODS

a. Stakeholder meetings with law enforcement agencies.

Stakeholder meetings were scheduled with law enforcement agencies (LEA) who can facilitate in curbing wildlife crime and illegal wildlife trade. These LEA are present at important and critical areas along the transborder region where Forest Department presence is sparse. Thus, these agencies can facilitate and have similar guidelines in their mandate to protect the natural resources of the country. Two meetings were organised the first at Rekong-Pe, Kinnaur District and the second at Keylong, Lahaul sub-division of Lahaul and Spiti District. The agencies which attended the meeting included Indo-Tibetan Border Police (ITBP), Border Road Organisations, Police Department, District Administration and Forest Department.

b. Analysis of the existing training program

Forest Department: The existing training modules of the Forest Guard and Range Forest Officers training were accessed from the Forest Training Institute, Sundernagar, Mandi District where training of Forest Guard and Range Forest Officers is conducted. The Forest Training Institute at Chail also follows the similar curriculum for the training of Forest Guards and Range Forest Officers.

These training curriculums were assessed based on the competences set out in Lotter *et.al.*, 2016 for anti-poaching and anti-trafficking (Annexure II). These guidelines have 4 modules and 19 topics. The reason for selecting these guidelines as standard are:

- i. The guidelines are recent (2016) and have been formulated after a detailed consultative process involving subject-matter experts representing various diverse agencies and
- ii. The guidelines provides a basic benchmark “standard best practice” for anti-poaching covering various concepts and facets in anti-poaching.
- iii. The guidelines have been accepted by several organisations/ institutions who have mainstream these training modules within countries for training forest officials and have also ensured legal conformity of the same.
- iv. the topics could be electives or could be inserts within existing syllabus framework or selection of topics could be undertaken as per need and requirement of the candidates.

c. Identification of redundant topic(s)/ topics which could be taken up in lesser time frame within the existing curriculum Suggestion of anti-poaching topics/modules in the existing curriculum, commensurate to the time left and suggestion of additional topics for the incumbent officer.

d. Identification of topics for other law enforcement agencies

The existing training program was analysed based on the syllabus available/ provided by the agencies.

Depending on the role of the agencies, the existing topics were analysed whether there is an emphasis on wildlife related issues of crime and illegal trade.

V. RESULTS AND DISCUSSION

i. Stakeholder meeting

The stakeholder analysis was conducted on 17 June 2019 in Rekong-Pe, Kinnaur District and 29 August 2019 at Keylong, Lahaul sub-division, Lahaul and Spiti District. The meeting was attended by District Commissioner, Officers representing Police Department, Indo-Tibetan Border Police. The salient points from the meeting is listed below for the enforcement agencies. The minutes of the meeting are attached as separate documents to this report (Enclosure A and B).

Police Department: There is a need to enhance capacities on identification of species and awareness on Wildlife Protection Act -1972.

ITBP: Need to enhance capacity on identification of species protected in India and be part of coordinated patrols.

ii. Curriculum analysis

a. Range Forest Officer

The overview of the syllabuses shows that the present curriculum is divided into broadly 18 topics, enlisted in Annexure IV.

After detailed analysis of the curriculum, topics where time could be reduced or redundant were identified which are listed in Table 1. This freed up 20 hours in Theory and five field exercise days totalling to 68 hours, where 1 field exercise day is equal to 8 hours. To adjust the available time slots, relevant topics from the anti-poaching guidelines are suggested as substitute topics for insertion at relevant modules/topics in the present existing syllabus (Table 2). While, the remaining topics in the anti-poaching guidelines can be taken up as a separate module to be inserted in the existing time-frame (Table 3). The topics of anti-poaching are in the form of theory, practical or both.

However, in the meantime topics that are lacking in the existing syllabus but will require considerable training hours have also been identified and have been detailed separately (Table 3) as they cannot be included in the existing training module as they require additional time and resources. These can be taken up separately after the basic trainings. While, suggesting the additional topics care has been taken that, as far as possible, these should be easily taken up by the respective training institute within their premises and with minimum strain on the available resources. Also, care has been taken to ensure that there should be minimum burden of adding extra credit hours to the already packed time schedule.

Table 1: Topics which can be reduced or deleted within the existing syllabus of the Range Forest Officer.

Topics	Theory (hours)	Field (days)	Reduced Theory (hour)	Reduced field- exercise (day)	Remark
Aerial survey	10		0		Not required
Computer applications in Forestry	10		0		Not required
Industrial Disputes Act	1		0		Not required
Forest Law: Field exercise		5		2	Reduced time
Forest economics	40		20		Can be managed in less time
Tribals and five year plans	7				Not required
HRD and management		3		1	Can be managed in less time
TOTAL	48	8	20	3	

Table 2. Topics of substitution in place of redundant/less important topics in the existing syllabus of Range Forest Officers

Existing	Topic	Topic for insertion	Theory (hours)	Practical (hours)
Application of Modern Tools/ Techniques	Part B: Computer application in Forestry	MSTripES, Camera traps		1
	Part C: Application of GIS	Practical: Tracking, recording, plotting on maps. GPA and Drones for monitoring		4
	Part D:	Deep Search Metal Detectors, Drones for monitoring.		1
Adverse Influence of Forests	2.1 Human agency	Snaring, Poisoning, Electrocution, Criminal threats to Forest/ Natural Resources	0.5	
Forest Policy & Law		Theory: Wildlife crime cases using Prevention of Money Laundering Act-2002 in India; Crime scene investigation	1.5	
		Practical: Moot court, Mock trial, wildlife crime scene investigation, evidence collection, filling of report.		6
Ethics, safeguards, work culture & Human rights as part of HRD & Management	1. Institution	Human rights	2	
		Joint operations & cooperation with LEA	1	0.5
	2. Individual	Values and Ethics	3	
		Mental & physical fitness	3	2
		First Aid		8
	first aid: team leader		4	
TOTAL			11	26.50*

* 0.50 is half the time of an hour which is 30 minutes

Table 3: Anti-poaching module with topics for Range Forest Officers. (note* = half time of an hour)

Module	Topic	Sub-topics	Theory (hour)	Practical (hour)
Principle & Philosophy	Criminal threat & transnational organised crime to natural resources	Criminal threats and transnational organised crime	1	
		Operational Security	1	1
		Protection strategy	1.5*	
Protecting and maintaining security	Field Craft	Weapons handling	4	12
		Survival skills	3	4
		Camouflage and concealment	1	0.5*
		Radio communication	0.5*	0.5*
		Hand signal		2
	Operational enforcement skills	Mission planning and orders	1	2
		Emergency response & immediate action	1	4
		Patrols	2	4
		Surveillance	4	8
		Cyber monitoring	6	6
		Searching and raids	0.5*	4
		Snaring and De-snaring	2	2
		Vehicle checkpoint	1	4
		Temporary bases	1	
Information and investigation skills	Wildlife crime information gathering	Wildlife crime information and knowledge management	2	2
		Interview and interrogate	1	2
		Basic crime scene investigation and photography	3	4
		Identification of wildlife products		3
		Pesticide and wildlife poisoning	1.5*	0.5*
		Retaliatory killing	0.5*	
Monitoring, maintaining records including database	maintaining records including database	Data collection and updating wildlife crime database	2	2
		Debriefing report	3	2
		Maintaining crime records		1
TOTAL			43.50*	70.50*

b. Forest Guard

The course schedule for induction training of Forest Guards in the Himachal Pradesh Forest Department consist of four modules namely General management of Office procedures, Basics of Forestry and FD duties, JFM and people participatory activity subjects and Skills common to all subjects. There are 27 topics, for which theory 353 hours, practical 17 hours, tour & field exercises 24 days and excursions 20 days have been allocated (Annexure IV). The training last for six months and is conducted at the Forest Training Institute Sundernagar, Mandi District and Forest Training Institute Chail, Shimla District.

After detailed analysis of the curriculum gaps in relation to coverage of anti-poaching topics, it was observed that the existing syllabus for training of Forest Guards had few topics within each module that are consistent with the anti-poaching guidelines. These were in the following topics namely Management of wildlife, Forest law, First-Aid and topics in managerial skills and office procedure. It was observed that there are topics for which time could be re-allocated (Table 4). The existing time allocated for these topics are 48 hours for theory & practical and 1 excursion day. The reallocated time to conduct these topics are 14 hours; 2 hours for theory and 12 hours for practical (1 day is equal to 8 hours of teaching) (Table 4). Thus, freeing up 42 hours which could be allocated for anti-poaching topics, which may be either inserted within the existing modules as topics or by creating a separate anti-poaching curriculum.

Table 4: Time reduction from minor topics that can be managed in less time.

Modules		Theory time (hour)	Excursion (day)	Re-allocated Theory (hour)	Re-allocated practical (day)	Reason
Forest survey & GPS	Chain & Compass Survey	4	-	2	-	Can be managed in less time
	Field Study: Chain, Compass	14	-		4	
Forest law	Excursion	-	1			
Computer application	Windows O.S.	6	-		2	Can be managed in less duration and during assignments
	Internet	8	-		2	
	Word	8	-		2	
	Spreadsheet	8	-		2	
Total		48	1	2	12	

* 1 working day = 8 hours

A few anti-poaching topics which can be accommodated as additional topics under the same module as a separate topic or sub-topic are indicated in Table 5. These topics will take 14 hours (Four hours theory and 10 hours practical's) The theory for these topics is to be taken at the practical time except for criminal threats to natural resources and transnational organised crime. Thereby, leaving 28 hours which could be used for an additional anti-poaching module which could be inserted in the syllabus (Table 6). If these. The Anti-poaching curriculum has two modules Field crafts and operational enforcement skills which accounts for 35 hours and 30 minutes which is Seven hours and 30 minutes of additional time requirement.

TRAINING GAP REPORT

Table 5: Substitute topics for insertion in the existing syllabus after removal of redundant topics.

Module in existing syllabus	Topic in existing syllabus	New topic for insertion	Theory (hour)	Practical (hour)
Forest Law:	Acts and rules	Crime scene response, photography, wildlife forensic sample collection, preservation, cataloguing and chain of custody	2	4
	Practical	Identification of wildlife parts, products, genuine vs fake		2
Forest Protection:	Human interfaces & their control	Criminal threats to natural resources in and around PA & transnational organized crime	1	
Wildlife & biodiversity conservation	Management of wildlife	Temporary bases	0.5 [#]	1
		Deep search metal detectors		0.5 [#]
		MSTrIPES, camera trapping	0.5 [#]	2.5 [#]
TOTAL			4	10

[#] = half the time of an hour which is 30 minutes

Table 6: Anti-poaching modules for Forest guards.

New Module	New Topic	Theory (hour)	Practical (hour)
Field craft	Survival skills	3	4
	Orientation, navigation, tracking		5
	Camouflage & concealment	0.5*	1
	Radio communications		1
	Hand signals		0.5*
Operational enforcement skills	Wildlife crime information gathering knowledge management	2	2
	Surveillance	2	2
	Search and raid	0.5*	4
	Vehicle checkpoints	1	1
	Ambush	1	1
	Night operations	1	1
	Snaring and de-snaring	1	1
TOTAL		12	23.50*

* = 30 minutes

To negotiate this extra time of seven hours thirty minutes, a few suggestions are made since the topics are linked and can be undertaken simultaneously with no additional cost or preparation by the instructor or training institute. The suggestions are as follows:

- i. Along with the topic of GPS, the topic of radio communication and hand signals can be undertaken. This will accommodate one hour and thirty minutes of the time.

TRAINING GAP REPORT

ii. Field exercise under Forest protection (1 day) where the entire practical of wildlife crime information gathering, surveillance, snaring-de-snaring and vehicle checkpoints can be undertaken. This will reduce the time by six hours.

iii. Along with the Field study of Chain and Compass survey, there could be GPS which could be used as a tool and the practical of orientation, navigation and tracking could be undertaken. As to undertake orientation and to navigate there is a need to use GPS or Compass or both and hence these field study could be combined. This field study is for four hours.

By undertaking these three rescheduling activities as they are linked topics, we can adjust and accommodate the extra seven hours thirty minutes in the anti-poaching module.

It was not clear in the syllabus as to whether the topics mentioned in the current syllabus does consider the topic in entirety such as Human Rights as listed under the Forest law whether it address all issues of human rights and Use of Force or only when considered with respect to detention of the accused. This topic is very crucial along with use of force and hence can be shifted under the module of general management of office procedure to be more relevant as a topic where in detail it can be discussed. The total time requirement is 3 hours (2 hours for human rights and 1 hour for use of force).

Similarly, data collection and debriefing reports should be included as topics. Data collection can be inserted as a topic under census of wild animals which is crucial part to understand what is going on with the species and the existing threats to the species in a area. The time requirement for this topic is one hour. Similarly, debriefing reports should be part of Office procedures and accounts as these are crucial logs which need the attention of the Deputy Ranger and Range Officer. These field data which are collected need a proper cataloguing and daily feedback needs to be given by the Range Forest Officer while the RFO uses the information for planning the next day in-terms of areas which need attention and focus to reduce wildlife crime or IWT.

c. Senior Forest Officers

For senior officers, it was suggested that special modules could be suggested so that they can enhance their capacity. In this line, three topics are suggested as per their roles and responsibilities. for ACF, DFO, CF and CCF. These are threat assessments, operational enforcement skills, knowledge management and legal procedures. The topics suggested under these headings is listed in table 7.

i. Threat assessment and operational enforcement skill:

The Senior Forest Officer must have adequate knowledge skills to assess threats present in their area of jurisdiction, while mechanisms of planning, monitoring and surveillance and search within the area including Human rights and the use of force.

ii. Knowledge management:

It is vital that knowledge is managed carefully and various means to obtain information and build information, cataloguing information for knowledge and for meaningful interpretation and for undertaking preventive interventions for protection and conservation of wildlife.

iii. Legal:

The legal framework pertaining to offenses related to wildlife and associated acts which are used for addressing crimes against wildlife, including moot court for participants.

Table 7: Topics suggested for Senior Forest Officers

#	Topic	Time (hr)	Method used
S1	Threat assessment:	1.0	Reading material, presentation
S2	Human Rights and Use of Force	1.0	Reading material, presentation
S3	Operational enforcement skill: Planning	2.0	Reading material, presentation
	Operational enforcement skills: Monitoring and Surveillance	2.5	Reading material, hands-on practical
	Operational enforcement skills: Search	2.0	Reading material, hands-on practical
S4	Knowledge management: Information and investigation skills; interview and interrogate	1.5	Reading material, presentation, hands-on practical
S5	Knowledge management: Maintaining wildlife crime records	1.0	Reading material, presentation
S6	Legal: Process involved in Wildlife Crime Cases.	0.5	Reading material
S7	Legal: Important aspects of Investigation	2.5	Reading material
S8	Legal Procedure: Arrest, Search, Seizure: Protocol and documents.	2.5	Reading material
S9	Legal practical: Moot court	2.5	Practical

The course is suggested for a period of 2.5 days accounting to a total of 19 hours. The course structure is provided in nine sessions (S) with time allocation.

d. Other enforcement agencies

Analysis was undertaken for Police, Custom, excise, and revenue officers as the assessment is given below

a. Police:

Analysis was carried out on the training program for Sub-inspectors (Table 8) indicating topics which are taught to the officers which are used for wildlife crime and illegal wildlife trade cases in India.

Table 8: List of modules for Police Officers with indicated topics of relevance to wildlife crime.

#.	No.	Module
PHASE- I		
1		Indian Penal Code
2		Criminal Procedure Code & Evidence Act
3		Local and Special Law
	8	- Prevention of cruelty to Animals Act 1960
	13	- Indian Forest Act 1927

TRAINING GAP REPORT

#.	No.	Module
	14	- Wildlife Protection Act 1972
	41	- HP Forest Produce Transit (Land Routes) Rules 1978
	42	- HP Forest Produce Regulation of Trade Act 1982
4		Police in Modern India
		- Role of NGOs & it's importance to Police
5		Police Organization and Police Set-up
6		HP Police Rules
7		General Police Duties, Police Practical work, and Computer Application
8		Police Practical Work
	1	Scene of crime & it's Prevention, Plan Drawing
	2	Collection of Evidence & Securing Help of Experts
	3	Search & Seizure & Recovery of property
	4	General principles of Investigation- Multi Disciplinary approach
	5	Examination of witnesses & recording of statements, Writing of case diaries
	6	Interrogation of Suspects & Accuse
9		Computer Applications
10		Criminology
11		Human Behaviour, Human Rights & Personality Development
12		Forensic science & Forensic Medicine
PHASE - II		
A		Case studies and simulation exercises
B		Duties of sub-inspector of police experience sharing
C		Problem solving exercises & discussions-major Acts/minor Acts
D		Written Communication
E	I	Computer Application (word processing, spreadsheet, and database management)
	II	Cyber Crime
F		Field Skills: Photography & Police Communication

b. Customs, excise, and revenue intelligence

The modules undertaken for officer trainee of the Indian Revenue Service (IRS) are given in table 9. The training program have attachments to various institutes for wildlife related issues there is an attachment to Wildlife Institute of India (WII).

Table 9: List of modules for Custom Officers with indicated topics of relevance to wildlife crime.

#	Module
I	Administration and Vigilance
II	Assessment and export promotion
	Allied Acts
	5 - Plant Quarantine (Regulation of import into India)
	8 - Environment Protection Act
	10 - Wildlife Protection Act
	13 - Interagency coordination
III	Central Excise & Service Tax law & Procedure
IV	Central Excise & Service Tax law & Procedure
V	Dispute Resolution
VI	Enforcement and Narcotics
	Intelligence
	Investigation

#	Module
	Preventive detention
VII	GST Law and Procedure
VIII	Law
IX	Public Policy & International Trade and Audit and Accountancy
	International Trade and India
	Other conventions relevant for customs and border protection: CITES

iii. Agencies/Institutions as mentor for anti-poaching module

Some of the training suggested under the analysis can be handled by the SFD, while for specialised topics the support of training institutes with other law enforcement agencies such as Police, Paramilitary, State Judiciary Academy, State/District Hospitals can be partners for training modules. Apart from them there are specialised agencies, institutions and non-governmental organisation which can facilitate as trainers for the same. These agencies such as National Tiger Conservation authority (NTCA), Wildlife Crime Control Bureau (WCCB), Central Bureau of Investigation (CBI), institutions such as WII, organisations such as TRAFFIC, World Wide Fund for nature Centre for Environmental Law (WWF-CEL), can be solicited by the Forest Department. The topic wise list of agencies is listed in Table 10.

Table 10: List of agencies/institutions/non-government organisation which can facilitate in undertaking suggested anti-poaching topics in the curriculum for Range Forest Officers and Forest Guards.

Anti-poaching topics	Range Forest Officer	Forest Guard
MSTrIPES	F.T.I / WII	F.TI/ WII
Camera traps, DSMD, Drones for monitoring for demonstration including maintenance	F.T.I / TRAFFIC-WWF	F.T.I/ TRAFFIC-WWF
Criminal threats to Forest/ Natural Resources & transnational organised crime.	F.T.I / WCCB/ TRAFFIC-WWF	F.T.I/ WCCB/ TRAFFIC-WWF
Moot court, Mock trial, wildlife crime scene investigation, evidence collection, filling of report. Wildlife crime cases using Prevention of Money Laundering Act-2002 in India;	Judiciary Academy/ WCCB/ TRAFFIC-WWF	Judiciary Academy / WCCB/ TRAFFIC-WWF
Human rights	Judiciary Academy	Judiciary Academy
Joint operations & cooperation with LEA	Po.T.A/ Pa. T.I	--
Values and Ethics	F.T.I	--
Mental & physical fitness	F.T.I	--
First Aid and First aid: team leaders	F.T.I/ Health Dept	--
Weapons handling including maintenance	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Survival skills	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Camouflage and concealment	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Radio communication	F.TI	F.TI
Hand signal	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Orientation, navigation, tracking	--	F.T.I
Mission planning and orders	Po.T.A / Pa. T.I	
Emergency response & immediate action	Po.T.A / Pa. T.I	
Patrols	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I

TRAINING GAP REPORT

Anti-poaching topics	Range Forest Officer	Forest Guard
Surveillance	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Cyber monitoring	Po.T.A / Pa. T.I	--
Searching and raids	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Snaring and De-snaring	F.T.I/ Po.T.I/STF TRAFFIC-WWF	F.T.I/ Po.T.I/STF TRAFFIC-WWF
Vehicle checkpoint	Po.T.A / Pa. T.I	Po.T.A / Pa. T.I
Temporary bases	Po.T.A / Pa. T.I / F.T.I	Po.T.A / Pa. T.I F.T.I /
Ambush	--	Po.T.A / Pa. T.I
Night operations	--	Po.T.A / Pa. T.I
Wildlife crime information and knowledge management	Police/ TRAFFIC- WWF	Police/ TRAFFIC-WWF
Interview and interrogate	Po.T.A / Pa. T.I	
Basic crime scene response and photography.	F.T.I/ WCCB/ TRAFFIC-WWF	F.T.I/ WCCB/ TRAFFIC-WWF
Basic identification of wildlife products	F.T.I/ WCCB/WII	F.T.I/ WCCB/ WII
Pesticide and wildlife poisoning	F.T.I/ State Forensic Lab	--
Retaliatory killing investigation	F.T.I/Police/	--
Data collection and updating wildlife crime database	F.T.I/ WCCB/	--
Debriefing report	F.T.I/ Po.T.A / Pa. T.I	--
Maintaining crime records	Po.T.A / WCCB	--

Note: PoT.I = Police training institute; Pa.T.I = Para-military training institute; STF Special Task Force

There is a need to have a post-training assessment and this can be instituted in the department under the training division. The assessment can be on the evaluation and review of training program which can be done in one or 2 days after every training schedule and the annual review of operations and potential training needs which can be done annually.

V. CONCLUSION AND RECOMMENDATIONS

a. Range Forest Officer:

In the analysis few gaps were found in the existing syllabus. These identified gaps along with the rationale are given as under:

i. Low emphasis on technology:

Technology has become an integral part of life now. This is true for everyone as well as for the foresters. Hence it is high time that the trainees are exposed to the latest advances in the technology which is widely being used for better conservation planning and ensuring enforcement. Two basic suggestion have been made:

- a) Introduction of MStrIPES: A software which is gaining importance in the country and has been widely rolled out in various tiger reserves of the country. This has been developed by technical experts in the field in collaboration with Wildlife Institute of India and National Tiger Conservation Authority. It can be downloaded in any android phone and can be used for making tracks of patrolling and recording valuable data during patrol. The data collected by the field team in this way is automatically shared with the top management who can use this for taking management decisions. This is of prime importance for the project area states as being mountainous terrain, tracking of patrolling parties are important both for the safety of the forest and wildlife and for the safety of the staff as well. A practical class has been suggested for this.
- b) Use of GIS: While there is already a dedicated time for 'Application of GIS' within the existing syllabus, it was felt that the real gap is regarding the exposure of the trainees to the practical aspects of GIS rather than just the theoretical aspects. This would also be an exercise to train the trainees about the first-hand use of GPS equipment as an outcome they will also be able to appreciate the theoretical aspects of GIS in a better way. It can be inserted as a fun activity during any of the two treks during the training period.
- c) Use of modern tools for conservation action: With increasing penetration of technologies, some modern tools are very effectively being used today for various conservation actions like population estimation, better patrolling, effective surveillance etc. It is imperative that the foresters of today are at least exposed to the use of these instruments and tools. A two hour practical module has been recommended to expose them towards the used of Camera Traps, Deep Search Metal Detectors, Drones etc.
- d) Effective Patrolling: The analysis of wildlife mortalities (e.g. from TigerNet: A joint initiative of TRAFFIC and NTCA) reveals that we are using our precious wildlife to snares, electrocution, and poisonings. Untimely mortalities of wildlife due to these reasons are sometime much higher than those caused by the poachers. Build capacities of the foresters to counter these during their field patrolling can go a long way to reduce such losses.
- e) Forest law and associated jurisprudence: With increasing diversity, both in the type of wildlife crime being executed as well as in the profile of wildlife criminals, it is imperative that for effective crime control we take support from other associated legal options available. This includes the laws which might not be related to wildlife crime directly but with effective dealing of organized crime such as 'Money Laundering Act'. The trainees should be exposed to such laws and the provisions there-in.

TRAINING GAP REPORT

- f) Similarly, it a cause of major worry for everyone dealing with criminal jurisprudence that the conviction rate in wildlife cases is abysmally low. This low rate of conviction decreases the cost for the criminals to get involved in this crime. Simultaneously it also demotivates the forest staff who works hard on a wildlife crime case only to see the criminal walking out without getting a commensurate punishment. The main cause of this failure is that the forest staff are not fully exposed to various processes and the procedures that are followed in the case of law. They make mistakes at various levels, right from collecting evidence from the scene of crime to systematically recording these evidences; from preparing the First Information Report to collecting relevant documentations; from interrogating the criminals as per the procedure to presenting their case in the court of law. Hence it is suggested that a practical, hands-on session on wildlife crime scene investigation, evidence collection, filling of report is included along with the exposure in the form of Moot courts and Mock trial.
- g) Human Rights: Increasing interface with communities and dealing with voluntary relocation of forest dwellers outside the forest it is crucial that the staff is trained towards the aspect of Human Rights as well as the associated laws. This is one of the most crucial input that is required today along with the technical knowledge.
- h) Values and Ethics: Similarly, the topic of values and ethics are important at the personal level which will affect not just the approach of the individual but will also help in improving the image of the forest department in public life. It is also important to discuss the ill effects of corruption and its negative impacts in workplace and society.
- i) Personal care and safety: For ensuring personal care specialized focus on mental and physical fitness as well as first aid is required. And hence it is recommended to be added to the overall syllabus.

Suggested topics and training plan for each training:

Application of Modern Tools/Techniques

Practical

- a. Introduction to MSTRIPES:
 - i. Theoretical background about need of better monitoring and history of its development
 - ii. Explanation of the features of the app version and its use while patrolling.
 - iii. Hand-on/Practical demonstration of the use of MSTRIPES as a monitoring tool for Protected /Forested Areas.
 - iv. Making participants conversant with MSTRIPES, the tool and how it is being used to monitor Tiger, Co-predators, and prey species in Tiger Reserves.
 - v. The feasibility and limitation of using MSTRIPES.

Time: 1hour field demonstration and hand-on use of MSTRIPES

- b. Use of GPS (Practical)
 - i. Application of GIS in monitoring: Practical use of Global Positioning System (GPS) for orientation, navigation, and mapping.

TRAINING GAP REPORT

- ii. Making participants conversant with GPS system and how to use the GPS to orient and navigate in the forest areas, map, store waypoints, routes etc on to the GPS system, transferring the data to computer and preparing a map of the same

Time: 4 hours: using a GPS to navigate and map a forest patch (4 kms away) and return using another route to the same point.

- c. Use of various modern tools:

- i. DSMDs: Practical demonstration of the use of Deep Search Metal Detectors (DSMD) in patrolling and checking.
- ii. The feasibility and limitation in the use of DSMD's.
- iii. Drones: Practical demonstration of the use of drones for monitoring and surveillance of the forest area. The feasibility and limitation in the use of drones, with respect to terrain, weather, connectivity.
- iv. Camera Traps: Practical demonstration of the use of Camera Traps for monitoring of wildlife population and for surveillance of the forest areas,
- v. Feasibility and limitation in the use of camera traps with respect to terrain, weather.

Hands-on training on the use of DSMD, camera trap, how to assemble, deploy and create inference, maintaining and cataloguing the data and reporting the same while for the drones it will only be a demonstration

Time: 1 hour (20 minutes for each)

Total time: 6 hours for suggested additional topics under Application of Modern Tools/Techniques.

Adverse Influence of Forests

Theory

2.1. Human influence:

- i. Poaching, Snaring, Poisoning, and electrocution: What is poaching, snaring, poisoning and electrocution in context of Wildlife Protection Act 1972,
- ii. Reasons for poaching, snaring, poisoning and electrocution.
- iii. The effect of poaching, snaring, poisoning and electrocution on the species and ecosystem.
- iv. Spill over effect of poisoning with examples within India, this must have an explanation of; run off pesticides from ponds, waterholes and its effect on other animal species which utilise the same resource or that feed on the resources which are poisoned.

Total Time: 20 minutes for the theory.

Forest Policy and Law

Theory:

1. Introduction to 'Prevention of Money Laundering Act-2002' and its applicability to wildlife crime and illegal wildlife trade.

Time: 30 mins

2. Crime Scene investigation and documentation as per law

Time: 60 mins: note: to be taken prior to the hands-on field practical.

Total time: 90 minutes

Practical:

TRAINING GAP REPORT

Hands-on field practical on how to:

- i. Secure a wildlife crime scene,
- ii. Collect evidence in conformity for forensic testing and legal provisions,
- iii. Maintain chain of custody,
- iv. Prepare wildlife offense report,
- v. Fill a complaint,
- vi. Present/depose evidence in front of judiciary through conduct of Mock trial and moot court (group exercise)

Total Time: Practical: 6 Hours (3 hours wildlife crime scene investigation, collection of samples, chain of custody; 2 hours reporting data, preparing of wildlife offense report; 1 hours presenting the case) can be done in two session of three hours and four hours respectively.

Note: The legal conformity process for wildlife crime scene investigation and evidence collection are explained to the participant prior to the practical.

To be undertaken in groups of not more than 5 participants, all forms and reports need to be presented in front of a simulated judiciary, so that the participants are familiarised with court procedures and proceedings.

Ecology and Environment Science

Theory

- i. Concepts and principles of conservation:

Explain the meaning of nature conservation, role of wildlife species and the natural environment; including habitat, niche, food chain, ecological processes related to wildlife species. Concept of sustainable utilisation and theories of the same.

Fundamental of wildlife care and how to deal with injured or snared animals.

Types of human-wildlife interactions (crop/livestock depredation), retaliatory killing and its effect on animal population, how to minimize disturbance to wildlife and maximize field officer's safety in the field during the above situation, Standard Operating Protocols for animal-human interactions, what to do when you find an injured animal. Mob management and media interactions during HWC cases.

The role of Forest Officers (guards, forester, ranger) as protectors of nature and its importance.

Total Time: 2 hours: (30 minutes for concepts; 60 minutes for wildlife care and 30 minutes for human wildlife interaction)

Practical:

- i. Demonstration of the SOP of wildlife-human interactions.

Total Time: Practical: 2 hours (demonstration of SOP on human-wildlife interactions, care for injured/rescued animal)

Note: To be undertaken in a group of maximum 5 participants. The participants must be briefed on the SOP prior to undertaking the field practical.

Forest Resource Management

Introduction: The following topic to be included as part of the introduction is the Criminal threats to Forest/Natural Resources

TRAINING GAP REPORT

i. What is wildlife crime, its global ramifications, transnational wildlife crime and illegal wildlife trade, drivers of wildlife crime and illegal wildlife trade, examples of species in wildlife crime and illegal wildlife trade incorporate species from the high altitude of Himalayas.

Total Time: 20 minutes

Human Resource Development and Management

The topic to be inserted are Institutional and Individual; for institution the following sub-topics may be inserted these are Operation security, Human Rights and Joint operation and cooperation with law enforcement agencies for individual the sub-topic to be inserted are values and ethics, mental and physical fitness and First-Aid.

1. Institution:

i. Operation security

Theory

Defining critical information examples include planning of upcoming patrol, locations of current patrols, names of informers, and any controlling any insider information that could benefit a poacher, methods to safeguard the same through compartmentalisation and other methods, principle of need-to-know, self-discipline and individual security, list ways in which operational security can be achieved; and an assessment outlining critical information, threats, risks, vulnerabilities and counter-measures of a site with an area and multiple sites in a landscape. Identifying suspicious behaviour including among peers and seniors and reporting the same individual security and thereby a threat to the operation.

Time: 2 hours

Practical: Demonstrate a thorough understanding of operational security and undertake the same at the forest fringe or a site.

Time: 1 hour: to be undertaken in a group

Total Time: 3 hours (2 hours theory, 1 hour practical) to be undertaken in a group.

ii. Human Rights

Theory:

What human rights are, concept, idea and essential belief and entitlement, how they are established, UN Universal Declaration, 1948- Annexure C and in the Constitution of India, and how they apply in the workplace, women and children. Humane conduct; categories and characteristics, regulations pertaining to torture, cruel and degrading behavior and detention especially for women and children; violations of marginalized/disadvantaged groups, emerging issues in human rights (Tribal rights and Forest Protection, Environmental Issues and Sustainable Development, Traditions, Culture and Human Rights); approaches and guidelines relating to human rights as outlined under the International Bill of Human Rights, The Universal Declaration of Human Rights; Procedures for reporting violation, mechanism of monitoring.

Total Time: 2 hours

Note: To ensure that human rights and humane conduct is practised, Forest officials will need not only education and training but rigorous monitoring.

TRAINING GAP REPORT

iii. Joint Operations & cooperation with Law Enforcement Agencies (LEA)

Theory:

Operational procedures, lines of communication and command during joint operations, marry-up procedures, and agencies during joint operations, strengths and weaknesses of the individual units and forces involved, and the principles of how working together appropriately can improve the success of operations during interstate and intrastate and transborder operations. Using prior agreed Standard Operating Procedures during interstate operations, formulation of procedures for intrastate operations and transborder operations.

Time: 1 hours

Practical:

Demonstrate joint-operation procedure.

Time: 30 mins

Total time: 1 hour 30 minutes (1 hour theory; 30 minutes practical)

2. Individual

i. Values and ethics

Theory to include the following:

Explain what values and ethics are; factors which shape an individual's values; characteristics which would be deemed universally as being good values; Difference between individual vs organisational values and conducts; What is corruption, different forms of corruption; abuse of power; difference between individual vs professional work; How values and ethics effect decision making in what we regards as right and wrong decision; impartiality and integrity

Total Time: 3 hours

ii. Mental and Physical Fitness

The following topics to be covered under mental and physical fitness include drill and discipline and chain of command.

a. Drill and Discipline: Drills will be demonstrated during the practical while the theory will be explained during the practical where the aim of drill is explained include alternate proven approaches of instilling the elements and principles of discipline that will achieve the same aim and readiness

Theory

Discipline: what is meant by discipline for teams and self-discipline; State the definition and purpose of discipline; types of discipline, elements of effective discipline as a role in formulating a cohesive unit.

b. Chain of command: Explain the function of each level of command; pathways and flow of information between various levels; Define the role of reward and punishment; Staff grievance procedures as applicable to the respective Forest Division and Forest Department; and principle and importance of review and self-improvement; procedures that need to be followed if there is a grievance;

Time: 3 hours (Discipline: 1 hour; Chain-of-command: 2 hours)

Practical

Drill: Different drills for self and institutional discipline and focus, including drills which require team work to build a sense of comrade towards colleagues and the Forest Department.

TRAINING GAP REPORT

Time: 2 hours daily; (prior and post theory schedule).

Total time: 5 hours (Drill: 2 hours practical; Discipline: 1 hour theory; Chain-of-command: 2 hours theory)

Note: Theory of the drill to be explained during practical

iii. First Aid:

The following topic will be covered under this topic:

The ability to render medical aid to oneself and team members is a valuable life skill and crucial to the ongoing success of operations. It is also a skill that enables a forest official to assist family and friends, and the wider community in general.

Practical: explain the concept of care and Demonstrate a primary and a secondary survey for first-aid and explain what could result due to negligence and improper care; Demonstrate and explain treatment of fractures (spinal, cranial, limbs, torso); Hyperthermia, Heat injury, Dehydration, Hypothermia, and Frostbite; Shock, Burns, A foreign object in the eye, ear or nose, Chest injury, Bites and stings, Demonstrate and explain the correct procedures for CPR; Demonstrate and explain the different methods of controlling bleeding (direct and indirect pressure); Demonstrate and explain management of antiretroviral (ARV's)

For Team leaders only:

Demonstrate and explain assessing, opening and maintaining an airway; and Demonstrate and explain intubation and setting an intravenous line

Total Time: 12 hours (First Aid = 8 hours; 4 hours additional for team leaders to cover additional topics).

Additional topics (Extra time)

There are key components of anti-poaching which are not listed in the existing training manual, neither in the suggestions for the topics. As this component would require considerable amount of time and specific inputs hence, it is planned as a separate module for the training program. This module would be specific to key components of anti-poaching and facilitate the officials of the forest department to build on their capacity. These key components are listed in Table 11, along with description of the competencies which would be developed by each Forest officials who undertakes the training program.

Table 11: Key competencies for building institutional and individual capacity to prevent wildlife crime and illegal wildlife trade in Forest Range Officer.

S. N	Topics	Competency	Sub-competencies
1	Identification of wildlife species	Identification of scheduled wildlife species, part, product and derivatives in trade and identification of CITES Appendix I species and EXIM Policy listed species. Without this knowledge officer cannot enforce the law, even when political support and the agency is present.	Practical: Real vs counterfeit differentiation; Parts and product identification. CITES listed species in trade in India.

S. N	Topics	Competency	Sub-competencies
2	Effective patrolling	Patrolling needs to be effective while mapping signs of intrusion and or wildlife crime. It needs to be a first level information of on-ground situation and act as a deterrent. Patrol needs to be undertaken in all forested areas (territorial and wildlife) while the capacity of forest officials, including actions such as anti-poaching operations and combat skills need to be there.	Practical: Mapping of threats and markets, trade route on GPS and transferring the same for mapping on maps. Practical: Weapons handling its care and maintenance.
3	Investigation and intelligence	Wildlife crime enforcement relies heavily on investigation and intelligence. These competencies are needed at the frontline for collecting and processing evidence to developing informant networks, gathering intelligence, and conducting intelligence-led operations. All this is futile if there is a weak prosecution or if cases are not being pursued and FIR not being registered with the Police Department. Coordination among these two agencies is a required at the highest level for reducing wildlife crime and illegal wildlife trade.	Theory: Gathering, cataloguing information, and reporting the same, operation planning Practical: Search and seizure: case scenario village, market, vehicle, Camouflage and concealment, Coordination with other enforcement agencies especially Police Department.
4	Monitor, surveillance & data collection.	Monitoring, surveillance, and data collection are generally acknowledged as important competencies. Along with this the feedback mechanism is needed.	Theory: Mapping and planning surveillance and patrol routes, check points and checking of vehicle, de-snaring operations.
5	Evaluation of the training and program	An annual evaluation of the participants, trainers and training modules on the usefulness of the training, on the knowledge gained, attitudes towards wildlife crime and illegal wildlife trade and practice and SOP being deployed in the field; internal evaluation of trainers by the trainees and the relevance of the course modules. After three years an evaluation of the training program and its relevance	The knowledge, attitude and Practice evaluation can be done through various internet-based surveys and telephonic interview; Evaluation of the trainers to be done through an internal matrix of evaluation by the trainees A three year evaluation to be done by the FTI Academic committee.

b. Forest Guard

In the analysis of the curriculum few gaps were found. These identified gaps along with the rationale are given as under:

Emphasis on anti-poaching skills missing: The Forest Guards being at the forefront, must have adequate knowledge skills and equipment for undertaking basic patrols and surveillance. While, having the skills to survive, carry out patrols, raids, snaring-de-snaring operation, setting up and manning checkpoints, patrols, night operations are necessary for better enforcement and protection to wildlife. The absence of these skill sets can compromise the diligence and management plans being put forth to conserve and protect the wildlife within the forest areas and

TRAINING GAP REPORT

can have dramatic consequences on the wildlife and can make the Forest Guard vulnerable to poachers. These skill sets aided by modern tools and technology can go a long way in conservation and providing a haven for wildlife species. The details of suggested topics are as follows:

Forest law: Acts and rules related to forests

a) Crime scene response and photography, evidence collection and legal processes.

Theory

Describe the concepts of crime scene management and its importance in the 'field to court' continuum; Correct procedures to approach the scene including search for possible suspects still in the area and for evidence, Correct techniques to secure and protect the crime scene; correct techniques to protect and preserve evidence as-is at a crime scene in case of inclement weather, e.g. plastic sheeting placed over footprints, until arrival of the investigating officer.

Time: 2 hours

Practical

Demonstrate the correct techniques to initiate a preliminary survey, search and determine scene boundaries. Indicate the correct techniques to secure and protect the crime scene and the basic of crime scene photography using labels, bags and make accompanying notes and collection of biological evidence and non-biological evidence for forensic analysis

Explain how to report relevant details to the investigating officer and the common mistakes made by staffs at a crime scene and prepare the same.

Time: 4 hours

Forest law: Practical

Identification of wildlife products, true vs fake.

Practical

Identification of different wildlife items or products and explain the identification methods and how to list them according to the Schedules of the WPA-1972, CITES Appendix I listed species. Demonstrate how to record, measure and store wildlife items or products.

Time: 2 hours

Forest Protection: Human interfaces

Criminal threats to natural resources in and around PA & transnational organised crime.

Theory

Explain the process of identifying threats to a protected area; Explain importance of Spatial and temporal distribution of threats, Historical data, and Developing specific mitigation strategies for specific threats; Explain the different threats to your protected area and who the possible poachers and intruder groups are.

Time: 1 hour

Introduction to Wildlife & Biodiversity Conservation: Management of wildlife

a) Temporary bases.

Theory

The role of a temporary base; principles of temporary base selection taking into account defense, terrain, vegetation, wildlife and human movement patterns, access to water, shelter from the elements, proximity to water and the objective of the patrols; Reducing detection; Appropriate infiltration and exfiltration of a temporary base; Discipline and team and personal conduct required within a temporary base; Night and morning stand-to routine

TRAINING GAP REPORT

Time: 30 minutes

Practical

Demonstrate how to secure, occupy, establish, infiltrate and exfiltrate a temporary base, and carry out a night routine.

Time: 1 hour

b) Deep Search Metal Detectors

Practical

Demonstrate the different uses of deep search metal detectors in different scenarios such as locating hidden metal snares and in post-mortem examination.

Time: 30 minutes

Introduction to Wildlife & Biodiversity Conservation: Management of wildlife

a) MSTRIPES, Camera trapping

Theory

MSTRIPES: Theoretical background about need of better monitoring and history of its development, Explanation of the features of the app version and its use while patrolling.

Camera trapping: What is Camera trapping and its purpose in wildlife management, the different types of camera traps.

Time: 30 minutes

Practical

Demonstration of the use of MSTRIPES as a monitoring tool for Protected /Forested Areas.

Demonstrate the techniques to set up a camera for different field scenarios such as in grassland or a forest.

Time: 2 hours 30 minutes

Field craft

a) Survival skills

Theory

Define the concept of PRWF (Protection, Rescue, Water, Food) or PLAN (Protection, Location, Acquisition, Navigation); The importance of fire, the ability to create fire from a variety of methods and sources, and how to avoid getting burnt and how to survive a wildfire; The importance of and knowing how to keep warm and stay out of the cold, anti-slip methods and the importance of preserving battery terminals (applicable for cold climates); Methods of long-term storage of food.

Time: 3 hours

Practical

Demonstrate the creation of various shelters from man-made (poncho lean-to, beach flotsam), or improvised materials (vegetation, rock, snow) and explain the principles of correctly locating shelters regarding terrain and weather.

Demonstrate the basic rescue signals for use on land (and at water body) and demonstrate examples of such methods including the use of signal mirrors, signal fire pillars, smoke (dark and light), fluorescent strips, whistle blasts and flare guns. And how to identify and locate source of water and methods to extract it.

TRAINING GAP REPORT

Demonstrate navigating without instruments (using the sun, stars, prevailing wind or topographical features); locating the cardinal points and proceeding downstream/upstream to a village.

Demonstrate how to cross rivers and other dangerous obstacles applicable to his or her work area.

Time: 4 hours

b) Orientation, navigation, tracking

Practical

How to undertake a patrol, navigate the route to a marked point and return back.

Time: 5 hours

c) Camouflage and concealment

Theory

Principles of camouflage and concealment (choice of position, camouflage discipline), Methods of camouflage and concealment (hiding and blending)

Time: 30 minutes

Practical

Demonstrate an operation needing camouflage and concealment in various forest and climatic factors.

Time: 1 hour

d) Radio communications

Practical

Demonstrate the correct procedure to raise, transmit, receive and end a communication using standard accepted speech abbreviations and correct pronunciation.

Time: 1 hour

e) Hand signals

Practical: Demonstrate various hand signals used for silent communication within team members.

Time: 30 minutes

Operational enforcement skills

a) Wildlife crime information knowledge management

Theory: The role of intelligence gathering in contemporary law enforcement activities; The difference between information and intelligence and how to convert information into intelligence; Different types of intelligence; The basic principles, as well as opportunities and risks, related to the recruitment, handling and evaluation of informants and informant networks; Principles of information sharing mechanisms; Incentives and motivation for assisting law enforcement; and to debrief an informer and log information for reporting. Explain personality types and motivation.

Time: 2 hours

Practical: demonstrate an interview with an informant (asset) to obtain information and then catalogue the same and build on the existing information and prepare a report of the same.

Time: 2 hours

b) Surveillance

TRAINING GAP REPORT

Theory

Explain the different types of surveillance and observation posts; the principles and aims of surveillance; how to operate as part of a small unit (2–3 persons team); time and resource management (e.g. food, sleep, toilet); the principles of personal discipline (e.g. smoking, noise, movement, light, fires, monitoring target area); maintaining observation notes and records and assessing the relevance of actions observed.

Time: 2 hours

Practical

Demonstrate the correct selection and use of equipment for conducting a surveillance operation, the correct appreciation of camouflage and concealment principles whilst setting up a surveillance post over a target area and information on how to collect and catalogue the same.

Time: 2 hours

c) Search and Raid

Theory.

Explain the importance of requisite documents to undertake a search and raid and documentation of information if evidence is found (seizure memo) following procedures of wildlife crime scene investigations.

Time: 30 minutes

Practical

Demonstration of various search techniques to a person, property, vehicle (including in an emergency roadblock), area with their common hidden locations and possible indicators. Demonstrate a raid-techniques including evidence collection, information documentation as per modules in basic crime scene response and arrest procedures.

Time: 4 hours

Note: to be undertaken after completion of module on Basic crime scene response and photography, evidence collection and legal processes.

d) Vehicle checkpoints

Theory

Mention the principles of Vehicle Check Points (VCPs); legalities and recording information at a VCP; equipment required for both a planned and spontaneous VCP and roles and responsibilities at the VCP.

Time: 1 hour

Practical

Demonstrate, using tactically correct techniques, how to approach a vehicle and initiate contact with the driver, conduct a cooperative and a non-cooperative search.

Time: 1 hour

e) Ambush

Theory

List the reasons for an ambush; the legality; principles of ambushing; categories of ambushes; ambush groupings and associated responsibilities; tactically correct techniques of communication in an ambush; and withdraw from an ambush; the equipment required to conduct an ambush.

Time: 1 hour

Practical

TRAINING GAP REPORT

Demonstrate a deliberate and an immediate ambush during the day and at night avoiding detection and using strategic illumination and withdrawal from an ambush site.

Demonstrate how to initiate an ambush and follow-up techniques (searching ambush area) using live ammunition and the correct procedures for handling prisoners.

Time: 1 hour

f) Night operations

Theory

Explain how the human eye adjusts to darkness; the equipment needs for night operations, Night Vision Goggles (NVG) and thermal imaging optics; the tactically correct operation of NVGs and thermal imaging optics, the importance and conduct of light discipline.

Time: 1 hour

Practical

Demonstrate movement and navigation at night without and with NVGs.

Time: 1 hour

g) Snaring and de-snaring

Theory

Describe the importance of de-snaring; types of snares that are used in the area; where and how to find snares, how to remove snares; tactical planning for snare prevention and removal.

Time: 1 hour

Practical

Identify susceptible places where snares could be deployed for critical species in the area and how to neutralize them.

Time: 1 hour

The topics suggested would build key competencies in the Forest guard to tackle issues of poaching. The key elements are given in Table 12.

Table 12: Key competencies for building institutional and individual capacity to prevent wildlife crime and illegal wildlife trade in Forest Guard.

S.N.	Topics	Competency	Required Sub-competencies
1	Identification of wildlife species	Identification of scheduled wildlife species, part, product and derivatives in trade and identification of CITES Appendix I species and EXIM Policy listed species. Without this knowledge officer cannot enforce the law, even when political support and the agency is present.	Practical: Genuine vs counterfeit differentiation; Parts and product identification. CITES listed species in trade in India.
2	Knowledge management	Wildlife crime enforcement relies heavily on investigation and intelligence. These competencies are needed at the frontline for collecting and processing evidence to developing informant networks, gathering intelligence, and conducting intelligence-led operations.	Theory: Gathering, cataloguing information, and reporting the same, operation planning Practical: Search and seizure: case scenario village, market, vehicle,

TRAINING GAP REPORT

S.N.	Topics	Competency	Required Sub-competencies
			Camouflage-concealment, surveillance.
3	Monitor, surveillance & data collection.	Monitoring, surveillance, and data collection are generally acknowledged as important competencies. Along with this the feedback mechanism is needed.	Theory: Mapping and planning surveillance and patrol routes, check points and checking of vehicle, de-snaring operations, temporary bases, survival skills

c. Senior Forest Officer

The Senior Forest Officer are already trained to refresh critical and important aspect a few topics are suggested along with time frame for each topic and the method to be employed for the trainer.

Threat assessment

Theory

Operational security: Concept of critical information and how to preserve the same. How critical information is preserved, identifying suspicious behavior among peers, and reporting the same, Protection strategy: Threat identification and mapping spatial and temporal variation (beat to division level) for priority species or natural resources, Developing a protection strategy and plan for the identified threats

Time: 1 hour

Human rights and Use of Force

Theory

- i. Human Rights- The rights of a human, under the existing legal framework D.K. Basu guideline for arrest, UN Universal declaration, monitoring of the same at the division level.
- ii. Use of Force- When can force be used, Does and Don't to be considered prior to use of Force, monitoring of the same at the division level.

Time: 1 hour

Operational enforcement skill

a. Planning

Theory

- i. Mission planning and orders- Necessity for planning, how to give orders, The flow of order and execution of an order.
- ii. Emergency response & immediate action- Need for an emergency response plan, Roles and responsibilities, designating roles and responsibilities as per the situation, Does and Don't during an emergency response

Time: 2 hours

b. Monitoring and Surveillance

Theory and Practical

- i. Field monitoring- Patrol undertaken by field officers, what information to collect during a patrol, checking of field officers patrol diary, monitoring, and analysing the information

TRAINING GAP REPORT

from daily and long patrol, creating dashboards, reports of a patrol, feedback to field officers.

- ii. Surveillance: Difference between Surveillance and Patrol, Types and methods used for surveillance, important planning prior to conduct of surveillance, selection of officer for surveillance, reporting formats and cataloguing information.
- iii. Online-cyberspace: What is cybercrime, and pervasive use on wildlife species, Ways to monitor cyberspace, undertaking action for crimes in cyberspace

Time: 2.5 hour

c. Search

Theory and Practical

- i. Search: Preparations prior to search, briefing notes, methods for various situations, Equipment required for the conduct of search indoors and outdoors, delegation of roles and responsibilities.
- ii. Checkpoint: Identifying suitable sites for checkpoints, infrastructure (incl equipment) and human resources required, creating templates for monitoring and reporting, checking of reports and monitoring communication.

Time: 2 hours

Knowledge management

Information and investigation skills; interview and interrogate

Theory and Practical

- a. Wildlife crime information gathering: Difference between information and intelligence, how to convert information to intelligence, methods adopted to collect information, Informant, and informant network, debriefing an informer and cataloging information
- b. Electronic and digital surveillance including CDR analysis.
- c. Interviews and interrogation: Difference between interview and interrogation, methods of interview, methods for interrogation as per legal procedures

Time: 1.5 hour

Maintaining wildlife crime records

Theory

- i. Data collection: wildlife crime database, updating state level wildlife crime database and national level, importance of update, analyses, and dashboards for critical sites, species.
- ii. Debriefing report: Sensitive information, cataloging sensitive information, debriefing senior officer, and passing information to subordinates and precautions needed for sensitive.

Time: 1 hour

Legal

Process involved in Wildlife Crime Cases.

Theory

The various steps involved in a wildlife crime case from detection to conviction/acquittal.

Time: 30 minutes

Important aspects of Investigation

Theory

TRAINING GAP REPORT

Procedure to follow when Police is investigating agency, Interrogation, analysis of evidence, how to record evidence especially confessional statement, cognisance of offense, compounding of offense, remand/custody, custodial interrogation, launching of prosecution and trial procedure, producing accused in court and seeking remand/custody, complaint and its content and Bail

Time: 2 hours 30 minutes

Arrest, Search, Seizure: Protocol and documents.

Theory

Preparation prior for search, seizure, and arrest, on the spot proceedings, facilitate search (premise/ person), documents required for search (premise, person); Guidelines for arrest and documents, pre-arrest, arrest and post-arrest procedures and documents, rights of accused and duties of investigation officer; Seizure procedure for live animal, digital and IT related medium seizure procedures.

Time: 2hours 30 minutes

Moot court

Practical

Presentation of case by participants

Time: 2 hours 30 minutes

Training Institutes:

These suggested topics can be undertaken with support by various training institutes such as Police training institute or Para-military training institute for Operational enforcement skill (all three topics), Use of Force and knowledge management (information and investigation skills, interview and interrogate). Threat assessments and maintaining wildlife crime records can be undertaken by the State Forest Training Institutes and all legal topics including Human rights can be undertaken at the State Judiciary training centre.

d. Other law enforcement agencies

As the Police and Customs officers have undertaken training on procedural and legal issues of investigation including WPA-1972, we suggest that refresher course for officers of Police and Custom, excise and intelligence department may be conducted where two topics are suggested

- i. identification of wildlife species, parts, and products and
- ii. orientation towards wildlife crime and illegal trade in wildlife in India.

The above two topics may be introduced as part of the training program for Border Police (ITBP), and CISF. The identification of protected wildlife species under the WPA-1972, can be focused on species in high demand and species which are traded in large volumes including those species where there is local demand for various uses. These topics can be undertaken by WCCB or Forest Training Institute where a one-day training program can be organised.

VII. REFERENCE

1. Appleton, M.R. 2016. Global Register of Protected Area Competences and User Guide Version 3. Gland, Switzerland: IUCN.
2. Brett, R.S., Brunno, F.O., Ieuan, L. and David, P.E. 2019. Global wildlife trade across the tree of life. *Science* 366:71-76.
3. Challender D, MacMillan DC. 2014. Poaching is more than an enforcement problem. *Conservation Letters* 7:484–494.
4. Champion, H. G. and Seth, K. S. 1968. A revised survey of forest types of India. Manager of Publications, Delhi.
5. Doha Declaration 2015. The 13th United Nations Congress on Crime Prevention and Criminal Justice, United Nations, Doha 12-19 April 2015.
6. Ervin, J., K. J. Mulongoy, K. Lawrence, E. Game, D. Sheppard, P. Bridgewater, G. Bennett, S.B. Gidda and Bos.P. 2010. *Making Protected Areas Relevant: A guide to integrating protected areas into wider landscapes, seascapes and sectoral plans and strategies*. CBD Technical Series No. 44. Montreal, Canada: Convention on Biological Diversity, 94pp.
7. Forest Survey of India. 2019. *State of Forest Report*.
8. Holden, M.H., Biggs, D., Brink, H., Bal, P., Rhodes, J., and McDonald-Madden, E. 2018. Increase anti-poaching law-enforcement or reduce demand for wildlife products? A framework to guide strategic conservation investments. *Conservation Letters* 12: e12618.
9. IPBES. 2019. *Summary for policymakers of the global assessment report on biodiversity and ecosystem services of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services*. S. Díaz, J. Settele, E. S. Brondizio E.S., H. T. Ngo, M. Guèze, J. Agard, A. Arneth, P. Balvanera, K. A. Brauman, S. H. M. Butchart, K. M. A. Chan, L. A. Garibaldi, K. Ichii, J. Liu, S. M. Subramanian, G. F. Midgley, P. Miloslavich, Z. Molnár, D. Obura, A. Pfaff, S. Polasky, A. Purvis, J. Razaque, B. Reyers, R. Roy Chowdhury, Y. J. Shin, I. J. Visseren-Hamakers, K. J. Willis, and C. N. Zayas (eds.). IPBES secretariat, Bonn, Germany. XX pages.
10. Leader-Williams, N., and Milner-Gulland, E.J. 1993. Policies for the enforcement of wildlife laws: The balance between detection and penalties in Luangwa Valley, Zambia. *Conservation Biology* 7:611-617.
11. Linkie, M., Martyr, D.J., Harihar, A., Risdianto, D., Nugraha, R.T., Maryati, M., Leader-Williams, N., Wong, W. M. 2015. Safeguarding Sumatran tigers: evaluating effectiveness of law enforcement patrols and local informant networks. *Journal of Applied Ecology*. 52: 851–860.
12. Lotter, W.D., Roberts, K., Singh, R., Clark, K., Barlow, C., de Kock, R., Steiner, K., Mander, D., Khadka, M. and Guerrero, J. 2016. *Anti-poaching in and around protected areas: Training guidelines for field rangers*. Best Practice Protected Area Guidelines. Series No. 01.
13. Milner-Gulland, E., Bakarr, M., Eves, H., Robinson, J. and Wilkie, D. 2002. Hunting the world's wildlife to extinction. *Oryx*. 36. 328 - 329. 10.1017/S0030605302000637.

14. Negi, S. S. 2002 'Handbook of National Parks, Biosphere Reserves in Himachal Pradesh' Indus Publishing Company, Third Edition, p. 106.
15. Newmark, W. D., Foley, C. A. H., Erfimshaw, J. M., Chanbegga, D. R., and Rutazaa, A. G. 1993. Local Extinction of Large Mammals within Increasing Isolation and Forest Conservation. In W. D. Newmark (Ed.), *The Conservation of Mount Kilimanjaro* (pp. 25-46). IUCN, Gland.
16. Santos, A., Satchabut, T., and Vigo Trauco, G. (2001). Do wildlife trade bans enhance or undermine conservation efforts? *Applied Biodiversity Perspective Series*, 1(3): 1-15.
17. UN Office on Drugs and Crime. 2016. *World Wildlife Crime Report: Trafficking in Protected Species*. New York, NY: UN, 2016.
18. World Bank Group 2018. Tools and resources to combat illegal wildlife trade. <http://pubdocs.worldbank.org/en/389851519769693304/24691-Wildlife-Law-Enforcement-002.pdf>

Annexure I: Roles and responsibility of incumbent officer in the Himachal Pradesh Forest Department.

Officer	Duties and Responsibilities
Forest Guard	<ul style="list-style-type: none"> -To be fully acquainted with his beat and to have knowledge of everything taking place within his/her beat; -To be fully acquainted with and to possess a list of rights, privileges and concessions that may be exercised by the people in the forests of his/her beat; -Strictly to observe the rules for compounding forest offences; -To carry out under orders of the range officer; repairs to the boundary pillars, roads and buildings in his/her beat; -To carry out, without orders- a) the maintenance of fences; b) tending operations in regeneration areas and plantings; c) weeding of young plants but not to incur expenditure on these works without the range officers sanction; d)To see that the shooting rules are observed and to put a stop to illegal shooting and trapping.
Deputy Ranger	<ul style="list-style-type: none"> -To assist the Range Officer, to the best of his/her ability, to carry out the work of the department honestly and efficiently; -To carry out all orders that may be given to him/her; -To report to the Range Officer on all important happenings; -Thoroughly, to understand the rules for compounding forest offences and closely to observe them. Except as laid down in these rules s/he is forbidden to take money from the accuse. -To prevent the forest guards under her/his control from misusing their authority, accepting bribes or harassing the people.
Range Forest Officer	<ul style="list-style-type: none"> -To be responsible for all cash disbursements and expenditure within his/her range. All payments of pay and labor must, as far as possible, be made personally by him/her and s/he is personally responsible that labor is not employed for longer than necessary and that disbursement are made without delay; -To communicate all orders and instructions to his/her subordinates, and to see that they understand them and carry them out; -To check and control all work within his/her range, and to ensure that government funds are used in the most economical and efficient way; -To protect Government interest by insisting upon good work from all subordinates and labor and by producing the highest revenue from his/her range consistent with the highest principles of forestry; -To collect, check and consolidate all returns and registers, to prepare the monthly range accounts and to carry out all office work promptly and correctly; -To prevent any misuse of authority by subordinates, particularly in compounding forest offences.

Annexure II. Anti-poaching guidelines for Rangers (source: Lotter et al., 2016).

Module	Topic	Sub-Topics	
Policy, principles, and philosophy	Values and ethics		
	Concepts & principles of conservation & ecology		
	Roles and responsibilities		
	Teamwork		
	Operational security		
	Human rights		
	Use of force		
	Community collaboration		
Protecting and maintaining area security	Mental and physical fitness (Drill)		
	Weapon handling and maintenance		
	First aid	First aid ; First aid: team leader	
	Field craft	Survival skills	
		Equipment use & maintenance	
		Camouflage & concealment	
		Radio communications	
		Hand signals	
		Orienteering, navigation, Tracking	
	Legal	Wildlife protection legislation & court procedure	
		Evidence	
		Witnesses	
		Arresting procedures	
	Operational enforcement skills	Mission planning and orders	
		Patrols	
		Surveillance	
		Rapid response to emergency situations	
		Searching and raids	
		Vehicle checkpoints	
		Temporary bases	
		Ambush	
		Night operations	
		Snaring and de-snaring	
		Wildlife crime information gathering	
		Basic crime scene response and photography	
		Basic identification of wildlife products	
		Interview & interrogate	
Joint operations & cooperating with other law enforcement agencies			
Pesticide crime and wildlife poisoning/ retaliatory killing investigation.			
Cyber monitoring			
Reports & Monitoring	Data collection		
	Debriefing and reports		
Post training	Post training evaluation and review		
	Post-operation review for training requirements		
	Annual review of operations and potential training needs		

Annexure III: Existing syllabus of Range Forest Officer

Module	Topics	Sub-Topics
Botany Mathematics	General	Importance and objectives of teaching Botany
	Botany	Classification of plant Kingdom; External Morphology; Histology
	Maths	Arithmetic; Algebra; Trigonometry
Modern tools & technology	R.S	Aerial Survey; Remote Sensing in Forestry
	Computer Application in Forestry	Introduction to Windows ; Operating Systems; Word Processing; Spread Sheet; Database Management System; Graphical Packages and Multi-media Applications; Computer Viruses; Latest trends in Computers; Computers in Wildlife Management; Computers application in Forestry
	GIS	Theory and application of GIS
Silviculture- I	Silviculture	Introduction; Locality Factors; Site maintenance and improvement; Growth/development of trees; Classification of forest types distribution
	Practices	Natural & Artificial regeneration; Trending ; Genetics and improvement
Silviculture- II	Trees	General description ; Indian species of regional importance
	Systems	Introduction; Shelter wood system ; Selection; Coppice system; Conversion; Concept of Dauerwald and method du controle
Forest Resource Assessment	Tree measurement	Diameter & girth measurement; Height; Crown measurements; Volume measurement of logs and felled trees; Bark thickness measurement;;Tree form ; Volume estimation; Age determination; Growth measurement of trees
	Forest Biometry	Basic statistical method; Forest Sampling; Crop measurement
Forest Survey	Survey	Objects & scope; Scales; Measurement of distances; Chain surveying; Measurement of angle, Chain, & compass surveying; Plane table survey, Levelling; Topographical surveying and map reading
	Engineering	Role; Building material; Construction; Roads; Bridges; Conservation engineering; Estimation and costing
Adverse influence on Forests		Susceptibility; Prevention
Forest Utilisation		Wood harvesting; Wood technology; Wood based industries; Saw milling; Grading of timber; Sustainability of Indian Timber
Forest Policy and Laws		Forest Policy; Fundamental Principles of laws relating to forests; Indian Forest Act, 1927; Code of Criminal Procedures, 1973; Code of Civil Procedures, 1908; Indian Penal Code 1860, Forest (Conservation) Act, 1980; Industrial Disputes Act, 1947; Wildlife Protection Act, 1972; Environmental (Protection) Act, 1986; Eviction of Public Premise Act, 1986; Indian Evidence Act, 1872
Ecology & Environmental Science	Ecology	Concept; Population Ecology; Biotic Community; Principles of Ecosystem Ecology; Ecosystem of the World
	Environment Conservation Mgmt	Soil and Chemical Pollution; Air Pollution; Legal Provisions and remedies; Global warming and climate change; Water; Thermal; Noise Pollution ; Tools of environment management; National conservation strategy; policy statement; Environmental legislation in India; Geopolitics of environment

Module	Topics	Sub-Topics
Forest Utilisation II	NTFP	Introduction; Fibres and Flosses; Grasses, Bamboo and Canes; Essential Oils and methods of extraction; Oilseeds; Gums, resin, and Oleoresin; Edible plants, nuts and spices; Rubber; Charcoal; Miscellaneous products; Important dyes
	Medicinal Plants	Conservation of medicinal plants; strategy; examples of plants
Forest Resource Management		Introduction; Sustained yield; Rotation; growing stock and its increment; Yield regulation; Working Plan; Preparation of working plan; Office work
Natural Resource Management	Geology & Soil	Section A: Rocks; Section B: Soil
	Land Use & Watershed	Landuse problems in India; Waste land management; Range Management; Hydrological cycle; Soil & Water Conservation measures; Watershed Management Plan
Forest Economics	General	Introduction; demand; supply; utility; cost; production theory; pricing; markets
	economics	Economic structure in Forestry; Rotation; factors affecting economics; mature crop economics
Biodiversity Conservation and Management	Part I	Biodiversity; Introduction to plants and animal kingdom
	Part II	Megafauna of India; avifauna and ramsar wetland in India
	Part III	Conservation ethos of India
	Part IV	insitu and exsitu conservation and the role of gene banks
	Part V	Ecological sampling Techniques
	Part VI	International conventions concerning biodiversity CITES, CBD, intellectual property rights, Bio piracy. Wildlife (Protection) Act, 1972 and Forest Conservation Act, 1980 as corner stones of conservation in India. Biodiversity Bill/Act, Environmental pollution, Environmental laws and Environmental Impact Assessment
	Part VII	Biodiversity conservation
Joint Forest Management and Rural and Tribal Development		Introduction to Concepts of JFM and Participatory Approach; Agro-forestry; Social Forestry; Recreation Forestry and Landscaping; Extension and Publicity; Integrated rural development approach; Organisation of legislation to support the programmes; Prospects in Forest management; Tribal and 5-yr plans
Human Resources & Management.		Institutional; Individual
Forest Accounts and Procedures		General; Cash account; Forest Produce accounting and yield returns; Office procedure; execution of Conservancy and works

Annexure IV: Existing syllabus of Forest Guard

Module	Topics	Sub-Topics
Silviculture & Forest Mgmt	Silviculture	Introduction; Growth; Factors governing growth; Tree classification; Tending & thinning; Silviculture of Trees; Introduction and systems
	Regeneration	Natural regeneration; Artificial regeneration; Nursery; Planting operations
Wildlife Biodiversity Conservation	Biodiversity	Definition, Importance; Important high biodiversity areas in H.P.; Technique of conducting survey; Effect of forest management on biodiversity; Various methods of conserving bio-diversity; Eco-development planning in PA in HP
	Wildlife Conservation	Definition of wildlife, terms related to PAs; Importance of wildlife religious sentiments; Role of wildlife in forest ecology, Food chain, Food web; People awareness and extension;
	Status of Wildlife in HP	Distribution of wildlife in HP; PA, zoological parks; zoo; nature parks; awareness areas; Brief study of habitat of important wildlife in HP; Schedule of animals- endangered species in HP; Important species of Wildlife in HP
	Management of Wildlife	Method of census, Collection & identification of field evidence; eco-development and people participation in management Wildlife habitat management; food for herbivores; Brief of important sections of WLPA-1972; Captive breeding and zoo management; Control of poaching/trapping of animal- detection and prosecution of offenders; contagious diseases; wildlife migration; Compensation to damage by Wild animals; Human –animal Conflict & its management
Forest Botany	Field Botany	External morphology of a plant
	Economic Botany	Local names of 50 Timber and NWFP species; Economic importance and uses; Preparation of herbarium sheet for 10 important species
Soil & Water Conservation	Rocks & Minerals	Rocks & Minerals; Soil formation; Soil profile and horizons; Soil texture, structure, water, and pH 1-5; Important soil types and their properties, Land Capability Classification
	Species suitable	for different soil types: Important spp.
	Watershed	Concept and definition of watershed; Need for SWC for forest development; Watershed approach for development
	Hydrology	Hydrological cycle; Rainfall distribution and measurement; Run off; Peak run off; Water balance Silt Load
	Soil erosion	Causes; Factors involved Effects of erosion; Types of erosion Water and wind erosion
	Soil & water conservation measures	Vegetative measures; Contour; Vegetative barriers / checks; Agroforestry Engineering measures; Retaining wall; Gabion wall; Revetment; Spur Check dams Temporary; Brushwood; Boulder; Loose stone ; Log wood Permanent ; Gabion Structure; Masonry Combating spread of desert ; Sand dune fixation; Shelterbelts Water harvesting; Percolation ponds; Farm ponds;
	SWC	Indigenous methods of SWC/ WH; Linking SWC/ WH with MNREGA
Case study	Watershed Management based projects, CAT Plan; in HP.	
	Introduction	Need for survey; Types of survey; Chain / Tape; Chain and compass

TRAINING GAP REPORT

Module	Topics	Sub-Topics
Forest Surveys and GPS	Chain & compass survey	Prismatic compass-parts-handling-testing; Errors, correction; Precautions to be observed; testing the chain; traverse; forward and backward bearing; local attraction and its correction; method of traverse; recording in the field book; plotting; area calculation
	Contour & map reading	definition; scale, RF; methods of contouring; instruments used; contour intervals; Contour map reading; Use of 'A-Frame',
	Basics of GPS	Component of GPS; Working of GPS receiver; Advantages and limitations of GPS; Use of GPS in the field
Mathematics & Forest Mensuration	Basic mathematics	Units of measurement of length, area, volume, weight, capacity and density; Perimeter, area of circle, square, rectangle; volume of cylinder, cones, cubes, trapezoids; Fractions, decimal system, percentages, ratios; Calculate area, volume; Slope / gradient.
	Girth, height & diameter measurement	Breast height; use of tape; ordinary/ diameter type and callipers and their advantage and disadvantages; measurement of height using altimeters; diameter; height; volume relationship in trees
	volume measurement	form factor -volume of standing trees; volume of logs using quarter girth formula; stacked volume of firewood (stone, aggregate etc) and use of reducing factor
	Yield assessment	volume/ out-turn tables; use of wedge prism and point sampling; Use of Abney's level; know about volume tables of common species
	growing stock	total enumeration; partial enumeration
Forest Engineering	Building materials	stone; bricks-size-number/M3 -lime, cement sand and metal; mortar; concrete-cement-RCC and measurements
	Building construction	Site selection; Ground tracing; Foundation; DPC; Brick- Stone Masonry; Plastering; Painting; Roofing; Flooring; Doors and windows
	Water supply	Sanitary fitting
	Road	Types of forest roads; Alignment in plains and hills; hair pin bends; Camber, super elevation, gradient; side drains and their maintenance Inspection Path/Bridle path
	Estimate	making simple estimates of structures i.e. retaining wall, breast wall, check dams etc
Forest Utilisation	Forest products	Definition of forest produce; NTFP and timber products, classification availability. Social, economic, and ecological importance of forest land, importance of NTFP products.
	NTFP	Species, part of plants yielding products. Social economic & ecological importance. Stakeholders analysis, bottlenecks, marketing, sale, co-operations, improvement, and rationalisation.
	Timber forest products	Important parts, sources, socio-economic Stakeholder's analysis. Bottlenecks, processing, marketing; Case studies of indigenous "scientific" management of timber products; Revenue source; Explain the industrial & other basic uses of wood.
	Logging, tools & implements	Use of logging process, kinds of tools and implements- their required use; Tool maintenance; Brief idea of modern logging tools; proper use of logging process; Calculate Diameter, Girth, Height and Volume of A Standing Tree Use A Conversion Table
	Felling, conservation & methods	Different methods of felling, conversion & transportation of the products & Extraction by traditional methods. Maintenance of record of yield, proper method for harvesting & transportation

Module	Topics	Sub-Topics
	Depots	Definition, Kinds, utilisation, Defects in Timber, Maintenance, calculation of volume, rules, records, use of conversion tables
Forest law	Definition & legal classification.	forests, forest officer, forest produce cattle, vehicles, seizure and confiscation Reserved forests: reserved lands, protected forests, village forests, private forests, revenue forests and unclassified forests
	Acts & rules related to forests	Forest conservation act, 1980; FRA,2006; IPC, Criminal procedure code, LPA 1978, HP PPA,1971; Biodiversity Act 2002; EPA ,1976; HP Non-Biodegradable act; Mining rules; Timber Distribution rule ,2013; Fire rules; special forestry- related acts/ rules of the state concerned like sandalwood/ red sanders possession
	Detection of offences	Powers of forest officer -detection, investigation, custody of seized produce; preparation and filing of offence report/ first information report; preparation of seizure report; arrest of the accused; detention of accused (Human Right Issues)compounding/ prosecution of the case -custody of seizures -non-bail able warrants; Punishment for various violations
	Transit rules 2013	Transit of forest produce; Transit Pass; Confiscation of tools; Saw Mill Regulation Rule; River Rules; Sale of Timber Act, 1968
	Other Acts	Right to Information Act Background, Genesis, Salient feature, PIO, Appeal, Record Maintenance, Quiz, Exercises, Case studies; Labour Laws and Minimum Wages Act
Forest protection	Introduction	Overview, Why Forest protection; Factors responsible for degradation of forests; Forest Protection; Duties, responsibilities, and power of the field staff in protection of the forests
	Forest Fires	causes, types and effect on forests; prevention measures; fire lines; combative measures; watch towers; fire watchers; fire occurrence and damage reports; dealing fire offences
	Grazing & browsing	effects of grazing and browsing extent in HP -regulation; fencing
	Human interfaces & their control.	Illicit felling: Cause, extent, prevention & control - Enforcement: Beat systems, DRs & Premises, Forest CPs, Flying Squads, Van Thannas - Incentives: under JFM/PFM; Means to tackle and address issues of forest protection: patrols; encroachments; Issues in Demarcation and Use of GPS; Willful setting of fires; Traditional Approach of protection: Success & failures
	Plant injury	
	Wild animals, pests, and diseases:	
	Injuries due to natural calamities: flood, drought, snow, landslide	
	Protecting forest plantation: Grass sharing method, maintenance by local women/SHGs, Good Mix of NTFP Trees, involvement in conflict resolution	
	Issues with exotic & invasive species: Invasive Alien Species ,threats of IAS and dealing with IAS; Lantana eradication technique & rehabilitation -Monitoring the spread of IAS	
	Participatory Forest Management	JFM/PFM/ CBO

TRAINING GAP REPORT

Module	Topics	Sub-Topics
	Forests & Livelihood	Introduction, poverty & its effects on forestry, dependence of rural people on forests. Common property resource management, rural forestry needs and forest based problems. Rural development through forestry, income generation (NTFP) Eco tourism and Rural Development.
	Communication skills	Introduction, different ways and means of communicating, transactional analysis. Listening skills, application (tools), nonverbal communication, communication gap-local culture & language, presentation, case studies effective extension worker facilitator.
	Gender issues	Introduction to gender bias, role of men & women in forestry case studies how to resolve the gender biases and conflicts. Analyse the role of women in effective planning, management and sustainable of forest land resources and associate them in meaningful participation for planning and management.
	PRA	Social map, resource mapping, transects, time line, trend analysis, Seasonal diagram, matrix scoring, Venn diagrams,
	Microplan	Planning, process, steps, methods, treatment plan, roles and responsibilities,
Computer Application		OS: Basics of OS (windows)
		Internet: Email and net browsing
		Word Processor: MS word
		Spreadsheet: MS Excel
First-Aid		Different first aid exercises
Current trends in Forestry		Climate change & global warming; REDD+; CDM ; Any other current issues
Managerial Skills		Individual behaviour; team building; motivation; Leadership qualities; Supervisory skills; Public dealing; Dealing with media; time management; stress management
Office Procedure and Accounts		Definition & role of public servant; Conduct rules; Disciplinary rules; Organisational structure of forest department; Transfer of charge of beats; Beat manual & maintenance of financial records; Travelling allowance & leave rules

Annexure V: Human rights

The Universal Declaration of Human Rights (UDHR) is a milestone document in the history of human rights. Drafted by representatives with different legal and cultural backgrounds from all regions of the world, the Declaration was proclaimed by the United Nations General Assembly in Paris on 10 December 1948 (General Assembly resolution 217 A) as a common standard of achievements for all peoples and all nations. It sets out, for the first time, fundamental human rights to be universally protected.

Preamble

Whereas recognition of the inherent dignity and of the equal and inalienable rights of all members of the human family is the foundation of freedom, justice, and peace in the world,

Whereas disregard and contempt for human rights have resulted in barbarous acts which have outraged the conscience of mankind, and the advent of a world in which human beings shall enjoy freedom of speech and belief and freedom from fear and want has been proclaimed as the highest aspiration of the common people,

Whereas it is essential, if man is not to be compelled to have recourse, as a last resort, to rebellion against tyranny and oppression, that human rights should be protected by the rule of law,

Whereas it is essential to promote the development of friendly relations between nations,

Whereas the peoples of the United Nations have in the Charter reaffirmed their faith in fundamental human rights, in the dignity and worth of the human person and in the equal rights of men and women and have determined to promote social progress and better standards of life in larger freedom,

Whereas Member States have pledged themselves to achieve, in co-operation with the United Nations, the promotion of universal respect for and observance of human rights and fundamental freedoms,

Whereas a common understanding of these rights and freedoms is of the greatest importance for the full realization of this pledge,

Now, Therefore THE GENERAL ASSEMBLY proclaims THIS UNIVERSAL DECLARATION OF HUMAN RIGHTS as a common standard of achievement for all peoples and all nations, to the end that every individual and every organ of society, keeping this Declaration constantly in mind, shall strive by teaching and education to promote respect for these rights and freedoms and by progressive measures, national and international, to secure their universal and effective recognition and observance, both among the peoples of Member States themselves and among the peoples of territories under their jurisdiction.

Article 1.

All human beings are born free and equal in dignity and rights. They are endowed with reason and conscience and should act towards one another in a spirit of brotherhood.

Article 2.

Everyone is entitled to all the rights and freedoms set forth in this Declaration, without distinction of any kind, such as race, colour, sex, language, religion, political or other opinion, national or social origin, property, birth or other status. Furthermore, no distinction shall be made on the basis of the political, jurisdictional or international status of the country or territory to which a person belongs, whether it be independent, trust, non-self-governing or under any other limitation of sovereignty.

TRAINING GAP REPORT

Article 3.

Everyone has the right to life, liberty and security of person.

Article 4.

No one shall be held in slavery or servitude; slavery and the slave trade shall be prohibited in all their forms.

Article 5.

No one shall be subjected to torture or to cruel, inhuman or degrading treatment or punishment.

Article 6.

Everyone has the right to recognition everywhere as a person before the law.

Article 7.

All are equal before the law and are entitled without any discrimination to equal protection of the law. All are entitled to equal protection against any discrimination in violation of this Declaration and against any incitement to such discrimination.

Article 8.

Everyone has the right to an effective remedy by the competent national tribunals for acts violating the fundamental rights granted him by the constitution or by law.

Article 9.

No one shall be subjected to arbitrary arrest, detention or exile.

Article 10.

Everyone is entitled in full equality to a fair and public hearing by an independent and impartial tribunal, in the determination of his rights and obligations and of any criminal charge against him.

Article 11.

(1) Everyone charged with a penal offence has the right to be presumed innocent until proved guilty according to law in a public trial at which he has had all the guarantees necessary for his defence.

(2) No one shall be held guilty of any penal offence on account of any act or omission which did not constitute a penal offence, under national or international law, at the time when it was committed. Nor shall a heavier penalty be imposed than the one that was applicable at the time the penal offence was committed.

Article 12.

No one shall be subjected to arbitrary interference with his privacy, family, home or correspondence, nor to attacks upon his honour and reputation. Everyone has the right to the protection of the law against such interference or attacks.

Article 13.

(1) Everyone has the right to freedom of movement and residence within the borders of each state.

(2) Everyone has the right to leave any country, including his own, and to return to his country.

Article 14.

(1) Everyone has the right to seek and to enjoy in other countries asylum from persecution.

(2) This right may not be invoked in the case of prosecutions genuinely arising from non-political crimes or from acts contrary to the purposes and principles of the United Nations.

Article 15.

- (1) Everyone has the right to a nationality.
- (2) No one shall be arbitrarily deprived of his nationality nor denied the right to change his nationality.

Article 16.

- (1) Men and women of full age, without any limitation due to race, nationality or religion, have the right to marry and to found a family. They are entitled to equal rights as to marriage, during marriage and at its dissolution.
- (2) Marriage shall be entered into only with the free and full consent of the intending spouses.
- (3) The family is the natural and fundamental group unit of society and is entitled to protection by society and the State.

Article 17.

- (1) Everyone has the right to own property alone as well as in association with others.
- (2) No one shall be arbitrarily deprived of his property.

Article 18.

Everyone has the right to freedom of thought, conscience and religion; this right includes freedom to change his religion or belief, and freedom, either alone or in community with others and in public or private, to manifest his religion or belief in teaching, practice, worship and observance.

Article 19.

Everyone has the right to freedom of opinion and expression; this right includes freedom to hold opinions without interference and to seek, receive and impart information and ideas through any media and regardless of frontiers.

Article 20.

- (1) Everyone has the right to freedom of peaceful assembly and association.
- (2) No one may be compelled to belong to an association.

Article 21.

- (1) Everyone has the right to take part in the government of his country, directly or through freely chosen representatives.
- (2) Everyone has the right of equal access to public service in his country.
- (3) The will of the people shall be the basis of the authority of government; this will shall be expressed in periodic and genuine elections which shall be by universal and equal suffrage and shall be held by secret vote or by equivalent free voting procedures.

Article 22.

Everyone, as a member of society, has the right to social security and is entitled to realization, through national effort and international co-operation and in accordance with the organization and resources of each State, of the economic, social and cultural rights indispensable for his dignity and the free development of his personality.

Article 23.

- (1) Everyone has the right to work, to free choice of employment, to just and favourable conditions of work and to protection against unemployment.
- (2) Everyone, without any discrimination, has the right to equal pay for equal work.
- (3) Everyone who works has the right to just and favourable remuneration ensuring for himself and his family an existence worthy of human dignity, and supplemented, if necessary, by other means of social protection.

(4) Everyone has the right to form and to join trade unions for the protection of his interests.

Article 24.

Everyone has the right to rest and leisure, including reasonable limitation of working hours and periodic holidays with pay.

Article 25.

(1) Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services, and the right to security in the event of unemployment, sickness, disability, widowhood, old age or other lack of livelihood in circumstances beyond his control.

(2) Motherhood and childhood are entitled to special care and assistance. All children, whether born in or out of wedlock, shall enjoy the same social protection.

Article 26.

(1) Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory. Technical and professional education shall be made generally available and higher education shall be equally accessible to all based on merit.

(2) Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace.

(3) Parents have a prior right to choose the kind of education that shall be given to their children.

Article 27.

(1) Everyone has the right freely to participate in the cultural life of the community, to enjoy the arts and to share in scientific advancement and its benefits.

(2) Everyone has the right to the protection of the moral and material interests resulting from any scientific, literary, or artistic production of which he is the author.

Article 28.

Everyone is entitled to a social and international order in which the rights and freedoms set forth in this Declaration can be fully realized.

Article 29.

(1) Everyone has duties to the community in which alone the free and full development of his personality is possible.

(2) In the exercise of his rights and freedoms, everyone shall be subject only to such limitations as are determined by law solely for the purpose of securing due recognition and respect for the rights and freedoms of others and of meeting the just requirements of morality, public order and the general welfare in a democratic society.

(3) These rights and freedoms may in no case be exercised contrary to the purposes and principles of the United Nations.

Article 30.

Nothing in this Declaration may be interpreted as implying for any State, group or person any right to engage in any activity or to perform any act aimed at the destruction of any of the rights and freedoms set forth herein.