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# PARTNERSHIP FOR LAND USE SCIENCE (Forest-PLUS) PROGRAM

## *Report*

**Training program on Climate Change, Greenhouse Gas Inventories,  
Vulnerability, Mitigation and Adaptation for frontline officials of  
Himachal Pradesh Forest Department**

**December 19-20, 2013**

**Rampur, Himachal Pradesh**



**January 2013**

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# PARTNERSHIP FOR LAND USE SCIENCE (FOREST-PLUS) PROGRAM

## *Training Report*

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Rampur, Himachal Pradesh

JANUARY 2014

## **DISCLAIMER**

The author's views expressed in this publication do not necessarily reflect the views of the United States Agency for International Development or the United States Government.

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# ACRONYMS AND ABBREVIATIONS

DCF	Deputy Conservator of Forests
Forest-PLUS	Partnership for Land Use Science
FSI	Forest Survey of India
GCC	Global Climate Change
GHG	Greenhouse Gas
HP	Himachal Pradesh
HPFD	Himachal Pradesh Forest Department
MoEF	Ministry of Environment and Forest
NTFP	Non-Timber Forest Produce
REDD	Reducing Emission from Deforestation and forest Degradation
USAID	United States Agency for International Development
VFC	Village Forest Committee

# REPORT

## 1. INTRODUCTION TO FOREST-PLUS PROGRAM

The **Partnership for Land Use Science (Forest-PLUS) Technical Assistance Program** is a five-year **USAID**-funded program to reduce emissions and enhance carbon sequestration in India's forests by developing and testing effective ways to take REDD+ actions to scale. Working in close collaboration with MoEF and State Forest Departments, Forest-PLUS will assist in developing and deploying scientific tools and methods for improved ecosystem management and carbon sequestration, forest carbon inventory and reference baselines, designing modalities/ programs to create better incentives for forest dependent communities to participate in REDD+ activities, and enhancing individual and institutional REDD+ capacity.

## 2. BACKGROUND OF THE TRAINING PROGRAM

This was the first training course on 'Climate Change, Greenhouse Gas Inventories, Vulnerability, Mitigation and Adaptation' organized for frontline officials of Rampur circle of Himachal Pradesh Forest Department. This two-day training program was conducted on December 19-20, 2013 in New Nirsu, Rampur, Himachal Pradesh. Forest-PLUS designed this course mainly for Deputy Range Officers, Forester, and Forest Guards, of Himachal Pradesh Forest Department.

Presentations were prepared to be relevant in the Himachal Pradesh context. This training program is an output of and contributes to Forest-PLUS Activity 2.3.2, which is focused on building capacity on climate change issues; in this case within the State Forestry Departments of Forest-PLUS pilot landscape states.

## 3. PARTICIPANTS IN THE TRAINING PROGRAM

Details of participants (please see annex 2 for detail of participants) who attended this two days training program are as follows:

Sr No	Particular	Number
1.	Deputy Ranger/ Block Forest Officer	10
2.	Forest Guard	20
3.	Total	30

## 4. PROCEEDINGS OF THE TRAINING PROGRAM

### 4.1. Inaugural session

Training program on “Global Climate Change, Greenhouse Gas Inventories, Vulnerability, Mitigation and Adaptation” was organized on 19th and 20th December, 2013 for the frontline staff of Himachal Pradesh Forest Department at Hotel Mahesh Regency, Nirsu, Rampur, district Shimla, Himachal Pradesh.

Objective for conducting the training was to make forest department field staff aware of climate change, greenhouse gases and their effects on environment both biotic and abiotic, mitigation methods and adaptation measures for climate change. Participants were the frontline staff of forest department of three forest divisions namely Rampur Forest Division, Kotgarh Forest Division and Anni Forest Division under project area. Total number of participants was 30 which included deputy rangers and forest guards. After registration of all the participants, Mr. Sandeep Khanwalkar, Training Coordinator, Forest-PLUS Program introduced topics of the training program to the participants. He gave a brief account of Forest PLUS program in India, effect of climate change on forests and effect of forest degradation on climate change. He also introduced resource persons of the training.

Chief Guest of the two days training program was Mr. C. B. Pandey, IFS, Chief Conservator of Forests, Rampur Forest Circle, HP. In his inaugural note he discussed that forest department focuses to its mandate of plantations, soil and moisture conservation works mainly which are indirectly contributing to address issues related to climate change. He asked his frontline staff that whatever they learn from the training they should share it with their colleagues and the people of area in which they work. He mentioned that Forest-PLUS program is to create awareness and enhance understanding of the forest department staff on global climate change. He inspired participants to be active during all the sessions and learn as much as they can, with this note he ended the inaugural statement. Training Coordinator thanked the Chief Guest for attending the session. After this group photograph of all the participants, resource persons and the Chief Guest was taken and this followed with a short tea break. In the mean while a short film on ‘Beautiful Landscapes of Earth’ was also shown.



*Figure 1: Inaugural speech by Mr. C. B. Pandey, CCF, Rampur Circle*



## 4.2. What is Forest PLUS Program

Dr Sushil Saigal, Institutional and Governance Advisor, Forest PLUS Program, elaborated details of the Forest PLUS program in India, its formation and existence in Hindi language. He told about Earth Summit from where the discussion on climate change actually started and leading to the origin of REDD +. He made the two terms i.e. Forest PLUS and REDD + very clear to the participants so that they don't confuse and talked about relevance of Forest PLUS to India and Himachal.

## 4.3. Module 1: We and our environment

### Session One: Understanding environment and its components

Mr. Rishu Garg, Sr. Program Officer, Inspire Network for Environment, New Delhi facilitated this session. He started his presentation by reminding people about atom bombs explosion in Hiroshima and Nagasaki, Japan which is still experiencing after effects in the form of handicapped population and other deformities as negative use of science and knowledge. Another example he cited was of Yamuna River in Delhi which has resulted in immense pollution of the water and air as outcome of change in life style. He defined environment in a very simple way and told participants about its role in human life. Why forests are important and why CO<sub>2</sub> is important when it is causing environmental degradation. His entire session was very interactive and kept participants engaged in discussions. This was followed with a



### Session Two: Screening of a short film on our environment:

After presentation and discussion one sketch movie on climate change; the message contained in it was how we can prepare ourselves to face the changes in climate.

### Session Three: Open discussion

Entire session was interactive so separate open house discussions was not required.

## 4.4. Module 2: Global Climate Change

### Session One:

Dr. K. S. Verma, Director Institute of Biotechnology and Environmental Sciences, Dr. Y. S. Parmar University of Horticulture & Forestry, Neri, Hamirpur, HP conducted this session. He stated that over a period of time we have changed a lot; India had a very rich culture and value system which we are losing continuously. Our ancestors used to live in harmony with the nature and both were complimenting each other without causing any harm. Now the scenario has changed altogether; it is exploitation of natural resources everywhere and soon we will reach to the point of no return so it is high time to realize our mistakes, learn from them and take necessary steps. For every 300 m change in the climate there is corresponding change in vegetation. He explained climate relating it to vegetation, type of species from low to high altitude. The changes in climate is a steady process and has taken thousands of years, we were complacent earlier but now since its impact is apparent so we have become more sensitive and have accepted these changes. We have to make changes in our working system; introduce species according to the local environment and be more vigilant than past. His lecture was very easy to understand as it was flowing like a story and participants enjoyed him speaking for one and a half hour. Due to time constraint screening of film was shifted to evening session. The entire session was interactive so open discussion was not organized separately.



*Figure 2: Dr. K. S. Verma interacting with the participants*

## 4.5. Module 3: Greenhouse Gases and their role in Global Climate Change

### Session 1: Greenhouse effect, Greenhouse Gases and their role in Global Climate Change, Greenhouse Gas inventories

After lunch session on greenhouse gases was also taken by Dr K. S. Verma. He told participants how greenhouse gases were noticed to cause damage to our environment. He spoke about Kyoto Protocol, its mechanisms and carbon credit. Talking about greenhouse gases he explained various sources of emission; cited example of agricultural activities especially paddy grown in Punjab which releases appreciable

quantities of methane into the atmosphere, transportation, electricity generation and deforestation. He shared statistical data of greenhouse gas emission in India and told about India's action plan on climate change i.e. NAPCC (2008) and actions taken by HP state.

### **Session 2:**

Last session of the first day was on Biodiversity and climate change which was taken by Dr. S. S. Samant from GB Pant Institute of Himalayan Environment and Development, Mohal, Kullu, HP. He started by saying that biodiversity is an important component of the living system of our environment and that it is under pressure for its survival because of changes that are taking place in the environment. Biodiversity offers a range of services to the mankind including medicinal, aesthetic, recreational and spiritual. Many steps have been taken to protect and conserve our biodiversity; these are national parks, wildlife sanctuaries and biosphere reserves but these are not sufficient and much more is needed to be done as this valuable asset is threatened by climate change. He cited many examples of local flora which has medicinal value and is used in traditional system of treatment. He explained that a healthy forest is one which has mixed species of all age classes. He also shared examples of local flora which is showing signs of physiological changes because their natural zone is experiencing some changes due to climate change. Training Coordinator ended the first day by thanks giving to all the resource persons and participants for patient hearing.



### **Evening session:**

Participants were shown two short films on climate change. After screening of films participant shared their views about first day and also shared their feedback and what they want to know more about the subject.

## **Day Two: December 20, 2013**

### **4.6. Recap of day one**

Training Coordinator introduced the course for the day; he played a short film on 'Nature at Your Service' and told participants the value of working together. He handed over small paper slips to the

participants asking them to write down their learning from the first day's course. He then shared statements written by the participants and initiated discussion on it. The objective of doing so was to let everybody know each other's view about the previous day's sessions. Completing this discussion he presented overview of all the lectures covered in the first day, and also mentioned bullet points of the learning. Participants were given two cards to write their learning on two questions:

- What they learnt on first day about Climate Change?
- What are the topics on which they need more clarity?



*Figure 3: Recap of first day*

## **4.7. Module 4: Forests and Climate Change**

### **Session 1: Role of forests in Global Climate Change**

Dr. Sushil Saigal took first session of the second day, where he spoke about role of forests in global climate change. Beginning his presentation he gave simple definition of forest, forest cover in the world, India and HP. He mentioned that forests are the largest ecosystems and play an important role in regulating climate so we should understand what role they actually play. The climate change is a continuous process and is happening for millions of years but we could only see it now because of the devastation that has resulted by these changes. He gave state-wise forest cover data for India and also district-wise for Himachal Pradesh. Then he explained what climate change is, where he emphasized on anthropogenic activities as a major cause. He shared different sources of greenhouse gas emission especially CO<sub>2</sub> i.e. natural and manmade causes. He also discussed how Himalaya has originated and that it is a water tower of Asia, and has a rich biodiversity so we have to conserve this Himalayan ecosystem. He told that plant is a carbon factory, and soil is the largest carbon pool. Later with a pie chart he shared India's GHG emissions in 2007.



*Figure 4: Dr. Sushil Saigal facilitating session on Role of Forest in Climate Change*

## **Session 2: Group work**

Session two was a group activity where all the participants were divided into three groups according to their forest divisions. They were asked four questions:

- 1) What do you think how climate change is affecting life in your working area?
- 2) What are the changes in livelihood pattern of forest dependent communities due to changes in forest quality/degradation?
- 3) Who are most affected by climate change or forest degradation in your working area and how we can help or assist them?
- 4) What is your suggestion to address climate change issues, reducing forest degradation and deforestation and change in using pattern of forest land?



*Figure 5: Participants in group work*

### **Group work presentations:**

#### **Group one: Kotgarh Forest Division**

The group discussed about current changes in their area and come out with specific points for each question. Those are elaborated against each question.

- A.1. Untimely rains, road construction, fire in the forests, illicit mining, waste disposal in the open, drying of natural water resources and encroachments.
- A.2. Decrease in fuel wood, fodder, medicinal herbs and non-availability of timber
- A.3. Change in the rainfall pattern has affected crop productivity which has reduced farm income. Plantation in the neighboring forests and providing source of income through labor work can provide some solution. Making people aware of these facts.
- A.4. To address climate change, more plantation works and to check soil erosion check dams should be constructed.



### Group two: Ani Forest Division

1. Untimely rains, drying of natural water resources, damage to crops, economic loss, loss of fodder.
2. Decrease in income, dependence on forest is reduced, loss of NTFP, migration to urban areas due to damage to crops and reduction in agricultural productivity.
3. Agriculture based community, nomads and graziers and women. This can be addressed by protecting forests from fires, more plantation works and forest conservation
4. Encourage plantation works, changing ways of doing farming in mid hills, soil conservation work, water harvesting structures; farm ponds and controlling tree line.

### Group three: Rampur Forest Division

1. Untimely rains, drying of water resources, adverse effect on crops.
2. Decrease in fodder with consequent reduction in milk production, unavailability of fuelwood and timber.
3. Damage to crops by wild animals due to destruction of their habitats this has impacted lives of common people. For this plantation of local tree species should be done.
4. More plantation works, protection of forests from illicit felling and encroachments. Making people aware by involving *Gram Panchayats* and other agencies.

### Session 2:

Short film on Forest and climate change was shown to the participants.

## 4.8. Module 5: Addressing Global Climate Change - vulnerability, mitigation and adaptation

### Session 1: Global Climate Change and our life and livelihoods–vulnerability at global, national and local scales

Under this module the sessions on Global climate change and our life and livelihoods-vulnerability at global, national and local scales was taken by Dr Satish Bhardwaj, Prof. & Head, Dept. of Environmental

Sciences, Dr. Y. S. Parmar University of Horticulture & Forestry, Nauni, Solan, HP. He presented figures and facts about HP soils; soil is the largest pool of CO<sub>2</sub> but the changing climate is impacting it too. He mentioned if the temperature is high decomposition rate also speeds up and carbon stored in the soil is lost in the atmosphere. Human activities are responsible to a large extent. Agroforestry as an adaptation measure could be a good model for CO<sub>2</sub> sequestration and that it supplements the farm income. People should replace crops suiting to the needs of climate e.g. apple in Kullu district is replaced by pomegranate in lower altitudes as changes in climate has affected apple production and is shifting to higher places. Forests should not be fragmented and should be treated as a unit. To deal with drought rain water harvesting techniques should be adopted; trenches and ponds should be dug in the forests and plastic mulch can used to decrease the evapo-transpiration losses. He mentioned physiographic features of HP; it has steep topography, shallow soils, poor fertility and soil erosion and run off losses so we have to be extra cautious while introducing any new technique. He also talked about National Mission on Sustainable Agriculture and National Mission on Sustainable Himalayan Ecosystem and Shimla declaration on climate change and Himalayan development. In the end he shared some dos and don'ts which everybody can observe in daily life. This session was followed with a presentation of former US Vice-President Al Gore on climate change.



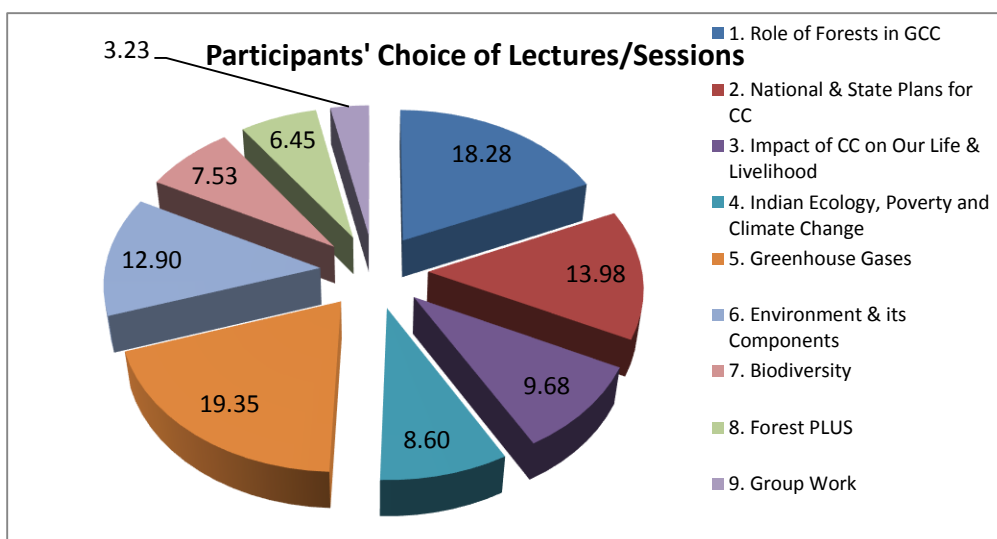
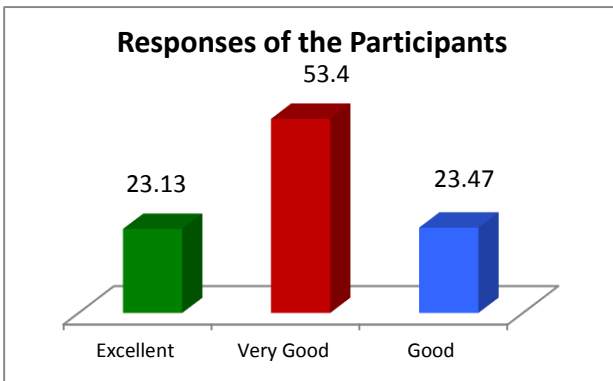
## **5. FEEDBACK SESSION:**

Feedback forms were distributed to all the participants to know their response about various topics covered in two days training program. The responses were divided into five categories namely excellent, very good, good, average and poor. Participants had to tick the appropriate category according to their understanding of the subject and preference. The responses were subsequently subjected to simple analysis to know the participants' feedback about different sessions. Figure on the 'Responses of the Participants' depicts that maximum responses of 53.4 per cent were under the category of 'very good', whereas similar responses of 23.13 per cent and 23.47 per cent were observed for other two categories 'excellent' and 'good', respectively.



The feedback response analysis implies that large number of responses were pointing that all the sessions were very good. In qualitative terms we can say that the responses in the form of statistical data suggest that content and methods of presentation including interactions were very good and more than half of the participants were in favor of that.

According to participants all the sessions were very informative and useful. Most of the information was new to them; topics on global climate change, environment and its components, greenhouse gases and their impact on the environment, role of forests in climate change and films.



Participants were also asked as to which lecture/session they found most useful. To this there were mixed responses and there was not any appreciable difference among them. About 19.00 per cent participants found sessions on Role of forests in Global Climate Change and Greenhouse Gases useful; this was closely followed by 13.98 and 12.90 per cent participants who liked National and State Plans for Climate Change and Environment and its Components. Only 6 to 9 per cent participants found sessions on Impact of Climate Change on Our Life & Livelihood, Indian Ecology, Poverty and Climate Change, Biodiversity and Forest PLUS useful. Very few participants i.e. 3 per cent liked Group Work.

### Suggestions of the Participants

- Such programs should be organized at least 3-4 times throughout the year
- For awareness generation films and documentaries related to climate change should be shown in every Gram Panchayat; schools should be included in the awareness campaign and they should be educated about this subject
- Mass awareness camps should be taken up for good results
- We should not throw garbage in the streams or nallas; women participation should be ensured to protect our environment as they are more sensitive

- Everybody at the national and state level should be involved in efforts towards climate change
- Awareness generation camps should be held at village and panchayat levels
- Films and documentaries would be more effective in making people aware and understand the cause of climate change
- Frontline staff should be updated from time to time about new techniques and practices in the field of forestry especially related to climate change
- These workshops should be organized at forest range level and people from every sphere should be involved in it
- Mahila mandals and yuvak mandals should be encouraged to participate more actively
- Trainings should also be focused on imparting technical knowhow to the field staff
- Participation of forest department frontline staff should be increased
- This training program was too loaded with new information and time was too short to understand these concepts and new things; fewer lectures of longer duration should be there

### **Learning/Comments of Participants**

- Want to know about environment its depletion and impact on human lives
- What steps should be taken to prevent fire in the jungles
- Why flora and fauna are important for the environment, diseases in the forests and their treatment; training covering these aspects should be at least for a week
- After knowing the data related to climate change now it is time to get aware of its impacts
- What can be the simpler ways of dealing with climate change
- Want to know the steps taken by forest department for combating bad effects of climate change
- Looking at the current situation how common people should be involved to get some solution
- How national missions are going to help combat climate change; how international community going to support
- Came to know about greenhouse gases and their effects, vulnerability and national plan in this direction
- What is carbon cycle and how does it work in the atmosphere; if carbon is good for us then why it is considered to be having bad effects
- Developed nations are responsible for the current situation, how can they be put under pressure
- What should be done to get rid of problems related to conservation of forests
- How greenhouse effect can be controlled; how to check degrading forest resources
- There should be one week training on forests, environment and biodiversity
- How to encourage community for active participation
- What are the bio-pesticides for fungal and other disease in the forests
- Came to know about environment, its biotic and abiotic elements and their interactions
- Detail information about Green India Mission should be given
- Foresters realized that excessive and indiscriminate cutting of forests have led to global warming as a result we are facing many problems
- Environment affects human life and livelihood so we should protect our environment and conserve forests
- They knew about rising temperature and its likely effects on human life
- To curb greenhouse effect we should do more plantations
- We should not waste electricity and also save fuel wood
- Learnt about importance of forests, Forest PLUS and REDD + programs
- Came to know that floods are a result of climate change
- Knew how important is carbon dioxide for our existence, and its bad effects
- For the first time came to know about greenhouse gases and their effect in the world

- Climate change may threaten existence of all living beings so it should be carefully dealt with
- Household wastage should be burnt at a fixed place or in a pit and should not be allowed to pollute the places
- Water and electricity should be used judiciously
- We need to take needed steps in our agricultural practices to suit to the changing climate, should make people aware of this situation

### Participants' Commitments/Actions to be taken

- Will try to make people aware of the climate change and encourage them to reduce CO<sub>2</sub> emission
- Will raise tree species tolerant to climate change in the departmental nursery
- Will make efforts to protect forests and protect them from fire
- Will not waste energy and make local community aware not to damage forest resources
- Will share whatever we have learnt here with the community of our areas
- Will encourage people to participate in plantation programs
- Will encourage people to plant native tree species as these are best suited to the local environment.
- Will have discussions with JFMCs and involve them in plantations and forest protection
- Will actively participate with *Gram Panchayats* and other agencies for the cause of climate change and forest conservation
- Good way to reach more people is to attend *Gram Sabhas* and have interactions with its members
- Will advocate to plant more trees around natural water sources and streams
- Selection of suitable plantation sites and species in accordance with the local climatic conditions
- Will train local community how to plant trees in the forests
- Will tell people about bad effects of fire in the forests
- For rain water harvesting will take help of village people for digging ponds in the forests

## 6. VALEDICTORY SESSION

Sh. CB Bhardwaj DFO Headquarters, Rampur Forest Circle concluded the two days training program. In his address Mr. Bhardwaj asked his staff to give continuous support and cooperation to the Forest PLUS team because one of the reasons for choosing Rampur circle is that it will perform best and deliver all kind of support for this program. Since global climate change is a buzz word in every international and national discussion so everybody should be aware of the new terms and this was the objective of two days training program. He thanked Forest PLUS team on behalf of forest circle.

In the end Training Coordinator asked everybody to work together with all mental and physical strength. Participants should disseminate the knowledge about climate change in their working areas and this will be a great contribution to the Forest PLUS program. He thanked all the participants to attend the training and staying in the hotel as this ensured sticking to the schedule and completing sessions in time. He expressed his gratitude to the resource persons who came from very far places and shared their knowledge and experience with all. For the cooperation and support he thanked forest department officials. He also appreciated Delhi office team for providing all kind of support and logistics for organizing the trainings.



*Figure 6: Group photo of participants*

# ANNEXURE 1: AGENDA



## Forest-PLUS Partnership for Land Use Science

### Training program on

“Global Climate Change, Greenhouse Gas Inventories, Vulnerability, Mitigation and Adaptation”

For frontline State Forest Department Officials

### Program Schedule

**Date** : December 19-20, 2013

**Time:** 9:00 AM – 05:30 PM

**Venue** : Hotel Mahesh Regency, New Nirsu, Tehsil Rampur, District Shimla

Day One- December 17, 2013		
Time	Session	Resource person
9:00 AM to 10:00 AM	Registration of participants	Regional Coordinator, Forest PLUS
10.00 AM to 10.15 AM	Introduction to the training course	Training coordinator
10.15 AM to 10.25 AM	Inaugural address	<b>Mr. C. B. Pandey</b> Chief Conservator of Forests, Rampur
10.25 AM to 10.30 AM	Vote of thanks	Training coordinator
10.30 AM to 11.30 AM	What is Forest-PLUS Program – an overview	<b>Dr. Sushil Saigal</b> Institutional and Governance Adviser Forest PLUS Program New Delhi
11.30 AM to 12.00	Tea break	
<b>Module 1. We and our environment</b>		
12.00 AM to 01.00 AM	<b>Session 1:</b> Understanding environment and its components	<b>Mr. Rishu Garg</b> Senior Program Officer, Inspire Network for Environment, New Delhi
1.00 PM to 2.00 PM	<b>Lunch break</b>	
<b>Module 2. Global Climate Change</b>		
2.00 PM to 2.45 PM	<b>Session 1:</b> Our changing environment – natural causes Our changing environment – role of humans Basic concepts and facts about global	<b>Dr. Kartar Singh Verma</b> Director Institute of Biotechnology and Environmental Science DR YSP University of Horticulture and Forestry

	climate change	Neri 177 001 Hamirpur(H.P)
2.45 PM to 3.15 PM	<b>Session 2:</b> Screening of a short film on Global Climate Change	
3.15 PM to 3.30 PM	<b>Session 3:</b> Open discussions	
3.30 PM to 4.00 PM	<b>Tea break</b>	
<b>Module 3. Greenhouse Gases and their role in Global Climate Change</b>		
4.00 PM to 4.45 PM	<b>Session 1:</b> Greenhouse effect, Greenhouse Gases and their role in Global Climate Change, Greenhouse Gas inventories	<b>Dr. Kartar Singh Verma</b> Director Institute of Biotechnology and Environmental Science DR YSP University of Horticulture and Forestry, Neri Hamirpur(H.P)
4.45 PM to 5.15 PM	<b>Session 2:</b> Interactive exercise	
5.15 PM to 5.30 PM	<b>Session 3:</b> Bio diversity in Himalayan region and Climate Change	Dr. S. S. Samant G.B. Pant Institute of Himalayan Environment and Development, Mohal, Kullu, HP
<b>Day Two – December 18, 2013</b>		
<b>Time</b>	<b>Session</b>	<b>Resource person</b>
9.30 AM to 10.15 AM	<b>Recap -</b> Interactive session on recapitulation of key points from Day-1	
<b>Module 4. Forests and Climate Change</b>		
10.15 AM to 11.00 AM	<b>Session 1:</b> Role of forests in Global Climate Change	<b>Dr. Sushil Saigal</b> Institutional and Governance Adviser Forest PLUS Program New Delhi
11.00 AM to 11.30 AM	<b>Tea break</b>	
11.30 AM to 12.15 PM	<b>Session 2:</b> Interactive group work	
12.15 PM to 12.45 PM	<b>Session 3:</b> Screening of short film on links between forests and Global Climate Change	
12.45 PM to 1.00 PM	<b>Session 4:</b> Open discussions	
1.00 PM to 2.00 PM	<b>Lunch break</b>	
<b>Module 5. Addressing Global Climate Change - vulnerability, mitigation and adaptation</b>		
2.00 PM to 2.45 PM	<b>Session 1:</b> Global Climate Change and our life and livelihoods–vulnerability at global, national and local scales	<b>Dr. Satish Bhardwaj</b> Prof. and Head Department of Environmental Science University of Horticulture and Forestry, Nauni
2.45 PM to 3.15 PM	<b>Session 2:</b> Screening of a short film on vulnerability to climate change	
3.15 PM to 3.30 PM	<b>Session 3:</b> Open discussions	
3.30 PM to 4.00 PM	<b>Tea break</b>	
4.00 PM to 4.45 PM	<b>Session 4:</b> Understanding Mitigation and Adaptation; International and national initiatives to address Global Climate Change; India’s National Action Plan on Climate Change and eight missions Green India Mission	<b>Dr. Satish Bhardwaj</b> Prof. and Head Department of Environmental Science University of Horticulture and Forestry, Nauni
4.45 PM to 5.00 PM	<b>Feedback session</b>	Training coordinator

5.00 PM to 5.30 PM	<b>Valedictory session</b>	<b>Chair – Mr C. B. Pandey</b> Chief Conservator of Forests, Rampur
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## ANNEXURE 2: LIST OF PARTICIPANTS

S N	Name & Designation	Designation	Organization & Address
<b>Guest and senior officials</b>			
1.	C.B. Pandey	CCF	Rampur
2.	Chander Bhushan	DFO (HQ) Rampur	
<b>Resource person</b>			
3.	Dr Sushil Saigal	Institutional and Governance Adviser	Forest PLUS Program, New Delhi
4.	Prof. K.S Verma	Director	Institute of Biotechnology and Environment Science, University of Horticulture & forest, Neri Hamirpur,
5.	Dr. S.K Bhardwaj	Professor	Department of Environmental Science
6.	Dr. S.S Samant	Scientist	G.B. Pant Institute of Himalayan Environment and Development, Mohal, Kullu, HP
7.	Rishu Garg	Senior Program Officer	Inspire Network for Environment, New Delhi
8.	Sandeep Khanwalkar	Training Coordinator	Forest-PLUS Program, New Delhi
9.	Dr. Punam Sharma	Regional Coordinator	Forest-PLUS, Rampur
<b>Participants</b>			
10.	Thakur Singh	Deputy Ranger	B.O, NKD Kotgarh
11.	Ramesh Chand	Deputy Ranger	B.O Kotgarh, Forest Division
12.	Mohar Singh	Deputy Ranger	Kumarsain Range, Kotgarh Forest Division
13.	Roshan Lal	Deputy Ranger	BO
14.	Tule Ram	Deputy Ranger	Nither, Luhri Ani Division
15.	Sohan Singh	Deputy Ranger	Ani Forest Div, Chowai, Forest Range
16.	Nagesh Chand	Deputy Ranger	Aera Range,
17.	Jai Prakash	Deputy Ranger	
18.	Bharat Singh Thakur	Block Forest Officer	Rampur
19.	Pitamber Negi	Block Forest Officer	Rampur Range
20.	Kewal Ram	Forest Guard	Sarahan Beat, Arsu Range, Division Luhari
21.	Gian Singh	Forest Guard	I/C Narkanda, Beat Range,



			Kotgarh
22.	Ranjit Singh	Forest Guard	
23.	Rampal	Forest Guard	Kotgarh Division,
24.	Prakash	Forest Guard	I/C Madhawani Beat Kotgarh Range, Kotgarh Division
25.	Sohan Lal	Forest Guard	
26.	Moti Lal Bushari	Forest Guard	Dashada Beat, Rampur Range
27.	Shyam Lal	Forest Guard	
28.	Mukand Lal	Forest Guard	
29.	Ramesh Chand	Forest Guard	POEG BEAT, Chowai Range
30.	Girdharilal	Forest Guard	Beat Tapray Range Nankhari
31.	Dhirender Mehta	Forest Guard	I/C Tashan Beat
32.	Bihari Lal	Forest Guard	Chowai, Luhri, Ani Division
33.	Rakesh Chand	Forest Guard	Nither Range, Anni Division
34.	Baba Ram	Forest Guard	
35.	Bhag Chand	Forest Guard	Aera Range,
36.	Taji Ram	Forest Guard	Dhar Beat
37.	Chetan Sharma	Forest Guard	
38.	Prakash Thakur	Forest Guard	
39.	Nageen Chaula	Forest Guard	
<b>Other guest</b>			
40.	J.D. Sharma	Asst, Register IBES,	Neri Hamirpur
41.	Dr. Sunil Marpa	Research Associate	GBPHED, Mohal, Kullu Himachal Unit

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