



Annual Report 2012-13
Centre for Ecology Development and Research



Project Funders:

- Sir Ratan Tata Trust (SRTT)
- Navajbai Tata Trust (NRTT)
- Himmotthan Society
- Uttarakhand State Biotechnology Department, Dehradun
- Uttarakhand State Council for Science and Technology (UCoST) , Dehradun

Donors

- M.G. Shahani & Co. (Delhi)
- Pevibai Motiram Shahani Trust
- Krishi Bhartiya Cooperative Limited (KRIBHCO), Noida
- Orange Tree Consulting, Gurgaon

Partners

- Collectives for Integrated Livelihood Initiatives (CInI)
- Department of Forestry, Kumaun University
- Department of Forestry, H.N.B. Garhwal Central University
- Central Himalayan Rural Action Group (CHIRAG)
- Doon Library and Research Centre
- Forest Department, Uttarakhand
- Yale School of Environment and Forestry
- Department of Geography, Cambridge University, United Kingdom
- Camvol, Cambridge, United Kingdom



“The greatest Oaks have been little Acorns”

D. Everett, In *The Columbian Orator* in 1797

Centre for Ecology Development and Research is Recognised as a Scientific and Industrial Research Organization (SIRO) by the Department of Scientific and Industrial Research (DSIR) under the scheme on Recognition of Scientific and Industrial research Organisations (SIRO's) 1988.

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Background

The Centre for Ecology, Development and Research (CEDAR) was established in January 2006 by a group of academics and development professionals with the aim to work on issues pertaining to environment, ecology and rural development in the mountain regions. Applied research and policy issues are of particular interest to CEDAR. In pursuance of its mandate, CEDAR aims to bridge information gap constricting field practitioners and decision makers in the field of environmental management. Towards this end, CEDAR proposes to develop as a field research and monitoring agency with an arm dedicated to supporting NGOs and building their capacity in the relevant areas.

Focus

The research activities of the Centre essentially focus on generating and interpreting socio-ecological field-data that can improve the management of natural resources. Central to CEDAR's ideology is the recognition that local communities must participate in the conservation of their habitat. Therefore, in addition to core research in forestry, ecology and social sciences, the organization also works towards strengthening links between communities and ecosystems by networking with grass-root organizations.

Vision

CEDAR sees itself as being a platform to carry out research work of relevance to people and their environment. It will help put together a mix of researchers, development professionals, and visionaries to identify areas where gaps in information and knowledge exist. These gaps could then be filled by in house resources – by collaborating with likeminded institutions and individuals.

CEDAR does not see itself as a research agency or a grassroots intervention agency but, instead, as an agency with an ability to work closely with both. Principal clients include state governments. CEDAR is currently working with in Central Himalayas and Chota Nagpur Plateau.

“There are always flowers for those who want to see them”

Henri Matisse quotes (Artist regarded as the most important French Painter and Artist of the 20th century, 1869-1954)

Ongoing Research Activities

1. Assessing the Impact of Integrated Fodder and Livestock Development Programme (IFLDP) on Livelihoods and Forests of Uttarakhand Himalaya

Project Area: Uttarakhand

Funding Agency: Himmotthan Society

Duration: 24 months



Given the reality of acute fodder scarcity, which has greatly affected the health and yield of livestock in the mountainous region of Uttarakhand, the Himmotthan Society, a Dehradun based organization, with the support of Sir Ratan Tata Trust (SRTT) commissioned a study to Centre for Ecology Development and Research (CEDAR) to

determine the impact of IFLDP programme on livelihoods and forests of Uttarakhand. The study aims to provide information on problems associated with fodder collection from forests and to assess the potential of IFLDP programme to fulfill the fodder requirement of the local inhabitants. Cluster of villages are selected mainly in five districts viz., Tehri, Chamoli, Nainital, Bageshwer and Pithoragarh. Several factors have been taken into consideration in the selection of the villages e.g. forest type, productivity and number of activities being carried out during IFLDP phase-I etc. After an initial survey of the selected sites, baseline information was collected for analysis; questionnaires have been developed on the basis of the baseline information to fulfill the objectives of the study. 21 villages have been selected for the present investigation, categorized into three altitudinal zones. Region I: Villages between 600-1200 m msl, Region II: Villages between 1200-1800 m msl Region III: Villages >1800 m msl.

Results of the ongoing study indicate that Intermediate elevation range exhibited the highest annual production of grasses ($22.27 \text{ t ha}^{-1}\text{yr}^{-1}$) followed by sub-tropical range ($20.12 \text{ t ha}^{-1}\text{yr}^{-1}$) and temperate range ($9.07 \text{ t ha}^{-1}\text{yr}^{-1}$). (Fig 1)

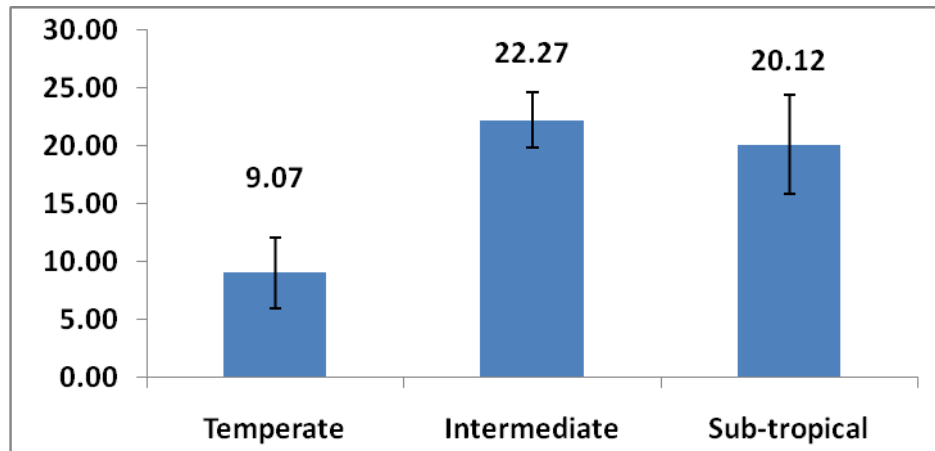


Fig: 1 Average planted fodder production at different elevation ranges (t ha⁻¹yr⁻¹)

Average annual grass (natural) production varied with the altitudes and lower altitudes exhibited the maximum production followed by middle and upper altitudes. In protected plots, productivity ranged from 13.94 t ha⁻¹yr⁻¹ (Upper) to 25.08 t ha⁻¹yr⁻¹ (Lower) whereas annual production of natural grasses in adjoining area was recorded as 9.52 t ha⁻¹yr⁻¹, 12.33 t ha⁻¹yr⁻¹, 19.20 t ha⁻¹yr⁻¹ in upper, middle and lower elevation respectively. (Fig 2)

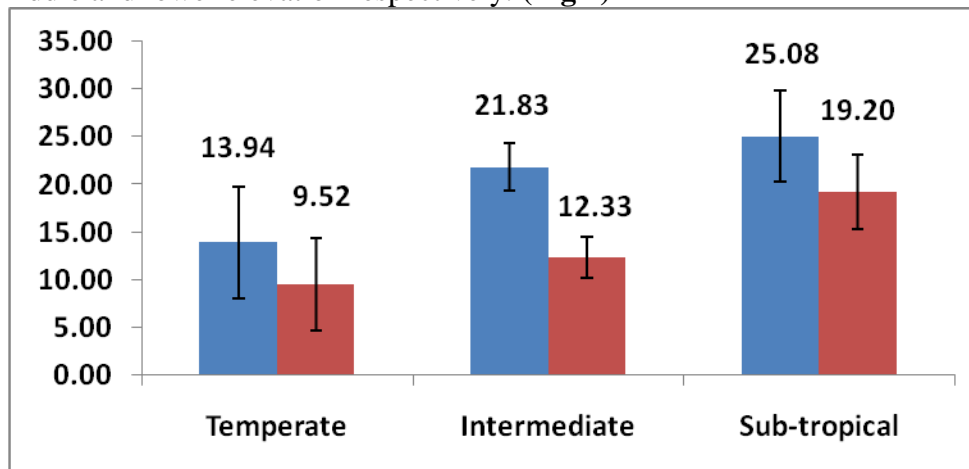


Fig 2: Average Natural Grass Production in Protected Plots and Adjoining area at different elevation ranges (t ha⁻¹yr⁻¹)

Increment in fodder availability

Under present intervention 4.38 t ha⁻¹yr⁻¹ fodder availability increased through fodder plantation in common land whereas through private fodder plots a total of 0.03 t ha⁻¹yr⁻¹ increments in fodder availability were recorded. A total of 4.41 ha⁻¹yr⁻¹ fodder availability increased under present intervention. (Fig 3)

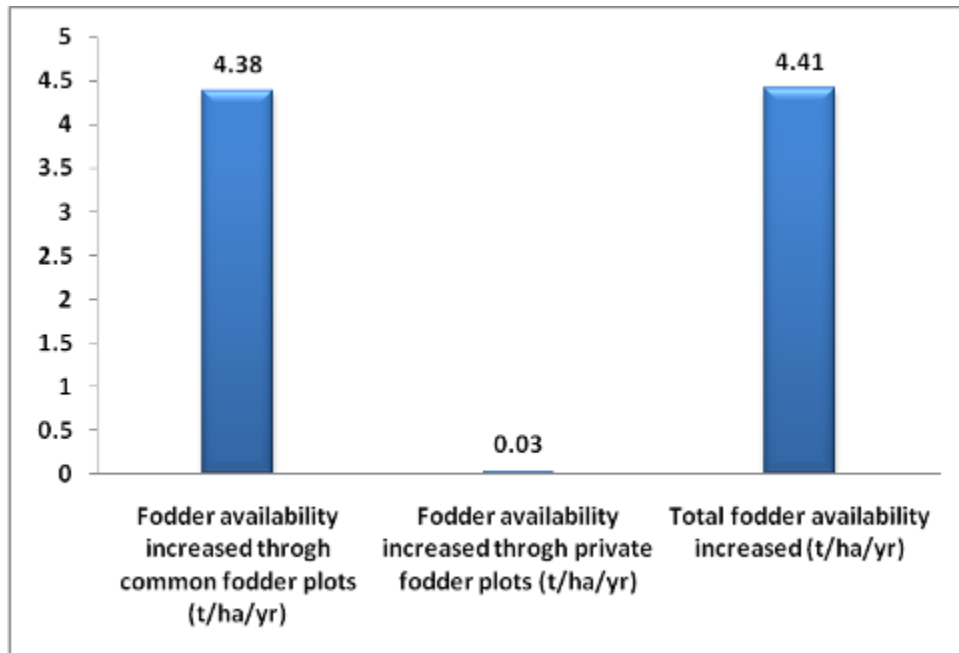


Fig 3: Average fodder availability increase from present intervention

Preliminary results indicate:

- *18.53% (67.65 days) of fodder requirement is met from planted fodder plots under this intervention*
- *Additional fodder production from private land is recorded on an average of 2.55 t yr⁻¹*
- *14.14 days yr⁻¹ of fodder requirement is met from the grasses grown on field bunds.*

2. Developing Organic Biostimulants to alleviate drought and cold stress and enhance plant growth in the Himalaya

Project Area: Uttarakhand

Funding Agency: Department of Biotechnology, Govt. of Uttarakhand, Dehradun

Duration: 24 months

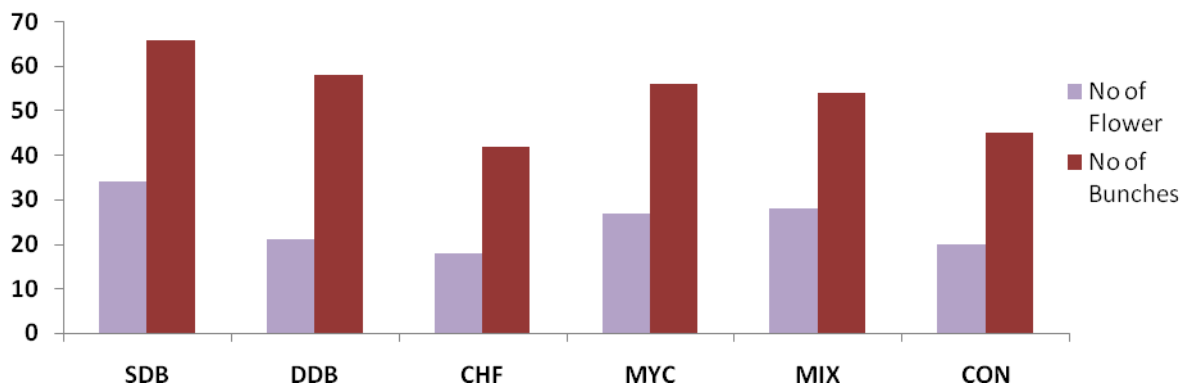
Organic Bio-stimulant defined as a non-nutritional product that can reduce fertilizer use and increase yield, enhance resistance to water and temperature stresses, helps plants in nutrient



uptake, water-holding capacity, increase antioxidants, enhance metabolism and increase chlorophyll production and positively affect plant growth and physiology. However, the product has been used by European and Italian farmers more than 35 years

but Prof. Graeme Berlyn and his team in 1990, of Yale University, has the credit to develop the concept of organic bio-stimulants. In the year 2011, Centre for Ecology Development and Research (CEDAR) proposed a study to develop bio-stimulants which may help plants against drought, cold and stress conditions. The study aims to develop and screen out the successful formulations of bio-stimulants for plant growth under stress conditions.

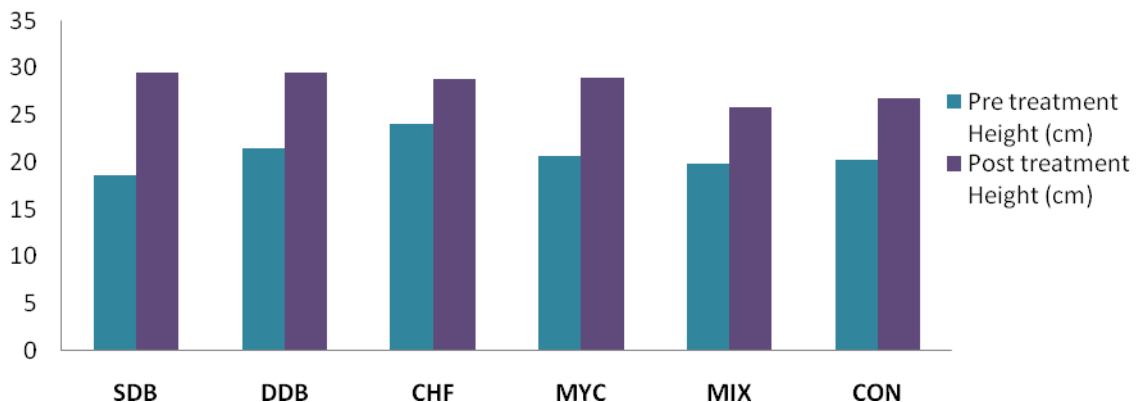
Initially, a prescribed and standard amount of mixture of bio-stimulant was prepared in the laboratory and its effects was assessed and compared with the inorganic fertilizers, mycorrhizae and mixture of bio-stimulant and mycorrhizae on plants of bean and wheat. Firstly, height and diameter of bean were recorded for five consecutive weeks and it was found that comparatively maximum height and diameter were recorded for the plants which were treated with single dose of bio-stimulant followed by double dose of bio-stimulant. After five weeks of height and diameter measurement, number of bunches of buds and flowers were recorded and it was found that number of bunches of buds and flowers were highest in those bean plants which were treated with the single dose of bio-stimulant followed by double dose of bio-stimulant.



SDB (Single Dose of Bio-stimulant), DDB (Double Dose of Bio-stimulant), CHF (Chemical Fertilizer), MYC (Mycorrhizae), MIX (Bio-stimulant + Mycorrhizae) and CON (Control)

Number of flowers and number of bunch of buds of beans

Similarly in case of wheat, height and biomass were measured and found that plants which were treated with single dose and double dose of biostimulant attained maximum height.



SDB (Single Dose of Bio-stimulant), DDB (Double Dose of Bio-stimulant), CHF (Chemical Fertilizer), MYC (Mycorrhizae), MIX (Bio-stimulant + Mycorrhizae) and CON (Control)

Mean values of pre and post treatment of height of wheat (*Triticum aestivum*)

In terms of total biomass maximum biomass was measured from those wheat plants which were treated with single dose of biostimulant followed by double dose of biostimulant.

We are further testing the efficacy of biostimulant on some fodder species for example (*Pennisetum purpureum* (Napier) and *Thysanolaena maxima* (elephant grass)). In the second phase of experiment focus would be on some medicinal plants.

3. Climate change in Uttarakhand: Current State of Knowledge and Way Forward

Project Area: Uttarakhand

Funding Agency: Uttarakhand State Council for Science and Technology, Dehradun

Duration: 6 months

The Uttarakhand Himalayas are now believed to be among the region most vulnerable to climate change. The rate of warming as indicated by various climate parameters such as temperature rise, retreat of glaciers, erratic rain patterns, etc. is higher in the Himalayan region than the global average. This has serious implications not only for the Uttarakhand Himalayas but also for adjoining areas. The glaciers in Uttarakhand are the source of some of the major river systems of



the world, vital to food security and well being of a multitude of people both in the Uttarakhand state itself and those living in the adjoining plains.

However, very little is known about the nature of climate change in the Himalayas and its magnitude. There are very few baseline studies to compare change with. This is especially true of the areas above 4000 meters. The experience and knowledge of

local communities has not been utilised or built upon. Whereas the limitations noted above continue to exist, the situation is changing gradually. Various organisations and governments have started to study the phenomenon of global warming and climate change in the Himalayan region. The Ministry of Environment and Forest, Government of India released an assessment of climate change in various parts of India in the period leading to 2030. The western and eastern Himalayas were given extensive coverage in this report. India has taken various initiatives to adapt to and mitigate climate change. National Action Plan on Climate Change is the vision

statement of the Government of India on this issue. Similarly Uttarakhand State Action Plan on Climate Change has been prepared. Just as climate change will not affect all parts of the world equally, not all persons would be equally affected by it. The vulnerability of the weaker sections of the population and those living in marginal areas and dependent on natural resources to earn a livelihood would be the most affected. Similarly some sectors of the economy would be more affected than others. There is an urgent need to build the resilience of weaker sections of society and the more vulnerable sectors of the economy to cope with climate change. This would require action on multiple fronts. Better understanding and predicting change, better understanding impact of change on various sections of society and sectors of economy, building institutional capacity and service delivery mechanisms, livelihood diversification, improved forecasting, effective disaster management plan, and regional cooperation. The report aims at synthesizing information on the impact of climate change on various sectors in Uttarakhand Himalaya viz. Glaciers, Forests, Agriculture, Tourism, Migration, Health and opportunities under carbon trade mechanisms.

4. Standardising a technique for the rapid and accurate measurement of Carbon assimilated by Himalayan forests

Project Area: Uttarakhand

Funding: CEDAR

Duration: 36 months

Leaf area index (LAI) is a measure of the total leaf area in a given unit area. It can be estimated by using certain simple to use devices. Research has shown that LAI is very closely correlated to estimate tree growth and carbon sequestration. Research done by CEDAR researchers has found this relationship to work very accurately for Himalayan forests and it is able to easily capture the effects of forest degradation (lopping of trees) and site quality.

This project aims to develop standard values between LAI and carbon sequestered for various types of Himalayan forests (Banj oak, Chir pine and Sal). Traditional measurements of biomass increase will be made through accurate measurements of tree diameter at one year intervals. The relationship between LAI and biomass increase will be worked out for various forest types in the Himalaya as standard tables. The study will enable the rapid and accurate measurement of a forests ability to remove atmospheric carbon (sequester the carbon). This will be reliable and scientifically validated. Measuring a forests ability to trap carbon will take only as long as it takes to walk through the forest using a hand-held leaf area meter. Standard tables developed through this project will enable any field worker



to convert the values obtained for leaf area into total carbon sequestration potential of the forest. Readings can be repeated at periodic intervals to show if a forest quality has improved or deteriorated.

This study will give a very simple tool to accurately determine forest quality. For long term analysis, CEDAR mapped 80 permanent plots in various forest types along altitudinal and disturbance gradient. In these plots, all trees and saplings were marked for periodic measurements and initial measurements were also covered vegetation analysis and leaf area index

5. Developing a strategy for Forest Based livelihoods in Central India through assessment of Major NTFP's

Project Area: Chota Nagpur Plateau

Funding Agency: Navajbai Ratan Tata Trust

Duration: 9 months



Despite the importance of Non Timber Forest Products (NTFPs) in sustaining rural livelihoods, furthering rural poverty alleviation, biodiversity conservation, and facilitating rural economic growth, NTFPs have not received the sustained and systematic support given to conventional agriculture and forestry. Instead, they remain largely neglected by national and local government development strategies, donor priorities and often overlooked by the formal

private sector. Where markets for NTFPs do exist, informal trade has in many cases led to over-harvesting and to opaque trading structures and inefficient markets. More precise research is needed on the ecological requirements and functions of NTFP species, their regeneration rates and yields in different forest types and ecological zones and on innovative silvicultural techniques for managing multiple products. Research is needed to clarify tenurial arrangements and understand the often conflicting layers of traditional rights, use pattern settlements, concessions and privileges and gender relationships. Institutional processes and organizational arrangements need to be better understood in order to help communities manage NTFP's as part of a broader livelihood strategy, while maintaining an equitable distribution of responsibilities and benefits. Research is needed on the values of selected commodities in village, district, national and international markets, on the marketing chain and the profits of collector/producers, processors and entrepreneurs.

Centre for Ecology Development and Research aims to identify major NTFP's of Chota Nagpur Plateau with special focus on the state of Jharkhand and district Ghadchorali in Maharashtra, We aim to prioritise top five NTFP's based on economic and social indicators, understanding basic value chain of selected NTFP's/ products, identification of constraints in marketing of NTFP's and, accessing policy constraints, institutional processes and organizational arrangements for NTFP promotion

Better understanding of the NTFPs of Chota Nagpur Plateau along with a more in-depth understanding of the NTFPs with the highest potential for scalability and impact for tribal's is expected to be the main output. The information will be of use for to Non Government Organisations (NGO's)/ funding agencies and government departments.

A publication on NTFPs along with a workshop focusing on various aspects of NTFPs will help bring focus to NTFP programmes in Chota Nagpur Plateau.

6. Revisiting opportunities for Carbon Trading and Co – Benefits in Uttarakhand Himalaya

Project Area: Uttarakhand

Funding Agency: Himmatan Society

Duration: 2 months

CEDAR developed a booklet entitled “Opportunities for Carbon Trading and Co – Benefits in Uttarakhand Himalaya” with the financial support from Himmatan society which was released on Tuesday the 24th by January, 2012 through a workshop “Climate change in the Uttarakhand Himalaya: Quantification, Mitigation and exploring opportunities from international carbon trade mechanisms” The booklet was highly appreciated by the government, non government organizations and general public and included comprehensive information on Climate change, Carbon trading procedure- International policies and opportunities and constraints, in relation to Uttarakhand

The idea of revising the booklet is largely due to the continuous negotiations taking place in international carbon trade arena. Our goal is to update the booklet by adding new information on climate change, climate change negotiations and adding specific case studies from Uttarakhand which have potential to generate direct and indirect benefits from carbon trade mechanisms.

Research Projects Approved

1. Understanding the impacts of Climate change and Forest Degradation on Carbon stocks and population dynamics in the Oak zone of the Central Himalayas.

Project Area: Uttarakhand

Sanctioned by: Department of Science and Technology, Govt. of India, New Delhi

Duration: 36 months

The study aims to better understand the functioning of the central Himalayan forest ecosystems and its response to climate change and chronic human disturbance. Estimating the shift in altitudinal zones of important tree species due to changes in climate is important to be able to predict the future composition of forests and their utility to local people. Mountains are a suitable habitat to study the altitudinal shifts of sedentary lifeforms such as trees as a result of climate change. Rapid changes in climatic zones due to altitude make the process of study of a shift in



ecological zones less dependent on random factors. Concurrently, better estimates of carbon sequestration rates, particularly in disturbed zones, will greatly enhance our ability to provide accurate carbon data for the Himalayan forests. This assumes great importance as a result of REDD which is currently being debated in the International arena. Finally, permanent plots have largely not been established for the central Himalaya. Early plots established by the forest department to look into growth rates do not focus adequately on regeneration and the impacts of human disturbance, and this study aims to establish plots that take into cognizance a range of disturbance regimes that typify the Himalayan forests today. CEDAR has established a total of 50 permanent plots in the oak forest area along disturbance gradient and the initial measurements have already been taken.

Workshop:

Ecosystem Services rendered by the Himalayan Mountain in National Accounting

Date: 18.6.2012

Venue: Indian Institute of Remote Sensing (IIRS), Kalidas Marg, Dehradun



Though not generally recognized, India is unique among developing countries to have incorporated the value of forest ecosystem services of its states in national

accounting. As per the recommendations of the 12th and 13th Finance Commissions of the country grants are transferred to forest-rich states in amounts corresponding to their forest covers. However, forest cover values hardly capture the values of ecosystem services flowing from Indian states, and amounts paid were only symbolic. Nevertheless, the recognition that ecosystem service is important for the sustainable development is a major advancement in the field of conservation and issues relating to equity. Though there are several economic valuation methods for ecosystem services, their biophysical measurements based on easily verifiable methods remain a problem. The methods need to be simple, easy to operate and cost effective. Our effort through this workshop was to achieve them for the Himalayan states of the country. At present the rationale used is that ecosystem services of a state benefitting the rest of the country should be valued and their values incorporated into national accounting as an incentive for ecosystem conservation.

In this workshop we focused on those ecosystem services of a state which benefit people of other states, and are conveniently measurable. The objective of the workshop was to develop a method to estimate the amounts of service flow in a biophysical terms, then rank the Himalayan states with regard to amount of ecosystem services that benefit people of the country. The government of India could decide rates of payment for the Himalayan states keeping in view money allocated to this and the ranks of states. The local communities need to be major beneficiaries of the money transfer from centre to states.

Initiative:

CEDAR is a lead partner of Yale Himalayan Initiative in the western Himalaya. The Yale Himalaya Initiative brings together faculty, students, and professionals across the University whose work focuses on the Himalayan regions of Nepal, India, Bhutan, Pakistan, and China, as well as the Tibetan cultural areas that traverse the borders of all those states. The initiative engages with the Himalaya as a significant transnational space for research and practice. Its location at the edges of the traditional area studies units of South, East, and Southeast Asia demands creative academic approaches. The idea is to create the first comprehensive, interdisciplinary University-led initiative in North America that explores the Himalaya as a trans-regional whole, while recognizing its ecological, social, and political diversity. In August 2011, led by CEDAR, members of the Yale Himalaya Initiative steering committee met with many local researchers and NGOs based in the western Himalaya at a workshop on research priorities in the Himalaya held in Dehradun on the campus of the Indian Institute of Remote Sensing.

Dr. Rajesh Thadani the Executive Director (*ex-officio*) of CEDAR is also an Alumni Representative to the Yale Himalayan Initiative, Steering Committee

Publications:

1. Singh V., 2012 The Future of Family Farming More than higher yields. From farmers' fields to Rio+20: Agro-ecology works! Farming Matters *LEISA International* Amersfoort, The Netherlands. | 28.2 | June 2012 pp. 3
2. Singh, S.P., Singh, V., 2012 Certain Observed and Likely Ecological Responses to Climate Change in Central Himalaya, *Climate Change and Environmental Sustainability* (April 2013) 1(1): 73-80
DOI: 10.5958/j.0000-0000.1.1.007



People

Board Members

Prof. S.P. Singh, FNA

Former Vice Chancellor, HNB Garhwal University, Srinagar, Chair of Excellence, Forest Research Institute, Deemed University

Prof. B.K. Joshi

Former Vice Chancellor, Kumaun University, Nainital, Director, Doon Library, Dehradun

Dr. Ravi Chopra

Director, Peoples Science Institute Dehradun

Mr. Kanai Lall

Founder Chairperson Central Himalayan Rural Action Group (CHIRAG)

Dr. Rajesh Thadani (Secretary)

(Ex-Officio) Executive Director, Centre for Ecology Development and Research

Research Advisory Board

Dr. Graeme P. Berlyn, E.H. Harriman Professor, School of Forestry and Environmental Studies, Yale University, Connecticut, USA

Dr. Margaret D. Lowman, Director of Environmental Initiatives, New College of Florida, USA

Dr. P.S. Roy, Dean Indian Institute of Remote Sensing, Dehradun

Dr. R.P. Singh, (Retd.) Professor Emeritus, Dept. of Forestry, Kumaun University, Nainital

Dr. Rajendra Dobhal, Director General, U-COST, Dehradun

Dr. Ankila Hiremath, Ashoka Trust for Research in Ecology and Environment (ATREE), New Delhi

Dr. Malavika Chauhan, Executive Director, Himmotthan Society, Dehradun

Research Team

Prof S.P. Singh, FNA: (Distinguish Fellow)/ Chairman

A forest ecologist who is among the best recognized ecologists of the country, Prof Singh has headed the ecology group of Kumaun University for over 20 years and published over 170 papers in journals of national and international repute. Prof Singh was the Vice Chancellor of Garhwal University between 2005 and 2008.

Dr. Rajesh Thadani: (Executive Director, Senior Fellow), Secretary *ex-officio*

An ecologist who completed his Ph.D from Yale (School of Forestry & Environmental Studies) where he also taught for a year. He has headed Chirag – the largest NGO in the Kumaun Himalaya. At present he is also an advisor to the Sir Ratan Tata Trust, Mumbai

Dr. D. S. Chauhan: (Senior Fellow)

Has worked on hydro-chemistry and sediment transport of Gangotri and Bhagirath Kharak glaciers, the main feeders for the Bhagirathi and Alaknanda rivers. He has also worked in the ecotourism sector and was closely associated with designing of an ecotourism services package for a resort near Corbett National Park in Ramnagar. He currently heads the Livelihood portfolio of CEDAR.

Dr. Vishal Singh: (Coordinator/ Fellow)

Vishal's areas of research interests pertain to ecological impacts of small scale chronic disturbances in Himalayan forests. Vishal has extensively worked on forest fires, development of allometric equations for carbon estimation and Reduction emissions from deforestation and degradation (REDD). Vishal has published several papers in journals of national and international repute. Vishal's recent research includes developing a technique for the rapid and

accurate measurement of Carbon assimilation broad leaved forests of Indian Himalayas and assessing opportunities for carbon credits and co- benefits in Uttarakhand Himalayas.

Dr. Sunil Bhatt: (Post Doctoral Fellow)

A Ph. D. in Forestry, worked on Garhwal Himalayan Oak forests along disturbance gradient. Sunil has good experience of working in Water and Sanitation sector. He was also engaged in Environmental consultancy for ecology and biodiversity under Environment Impact Assessment. His strong interest includes forest ecology, forestry resources management, environmental impact, conservation and management of natural resources.

Vivek Dwivedi: (Research Associate)

Vivek has worked on ecological restoration of derelict stone mine lands in Aravalli Hills along with various derelict mine areas of the country. He has also worked on biodiversity conservation and vegetation shifting in the Uttarakhand Himalaya. His areas of interest are dynamics of soil nutrients, role of microbial biomass in nutrient mineralization and ecological restoration of the degraded forest land.

Mr. Amit Bhakuni (Office Manager)

Interns:

1. Ms. Shorsha Roberts

Department of Geography, University of Cambridge

Duration – 2.5 months

Topic: *“Biomass Stocks of Q. leuhotricophora Forests under Different Disturbance Regimes in Kumaun Himalaya”*

2. Ms. Swati Gupta

Institute of Environment and Sustainable Development, Banaras Hindu University (BHU)

Duration – 6 Months

Topic: *“Synthesis Report on Impact of Climate Change in Uttarakhand Himalaya”*

3. Ms. Gargi Tariyal

Department of Forestry, H.N.B. Garhwal, Central University

Topic: *“Carbon footprint measurement of individuals in different income categories in Dehradun”*

Job Trainees

1. **Mr. Muneer Ahmad**, Department of Forestry, Kumaun University, Nainital

2. **Mr. Sharique Anjum**, Department of Environment Management, Forest Research Institute, Deemed University, Dehradun

Voluntary compliance

Voluntary Compliance with the Norms of Credibility Alliance

The Credibility Alliance has evolved minimum and desirable to promote better Governance within the Voluntary sector. While CEDAR is not a member of the alliance, we declare this information voluntarily to promote accountability and transparency.

Governance:

None of the Governing board members are related to each other or related to any of the senior salaried staff by blood or by marriage.

None of the Governing Board members (including the Chairman and Executive Director) have received any salary, consultancy or other remuneration from CEDAR. Travel costs, as per actual ticket submitted that were budgeted into projects were however reimbursed.

The Governing Board has met more than twice in the last year with the required quorum.

*6th Annual General Meeting held on September 23, 2012, 5 pm
Venue: A-17, Mayfair Gardens, New Delhi*

Salary: Maximum salary paid was of were Rs 40,150 /- month.

Travel: Maximum cost of any single rail ticket purchased was less than 2000 /- rupees
No international travel was incurred.

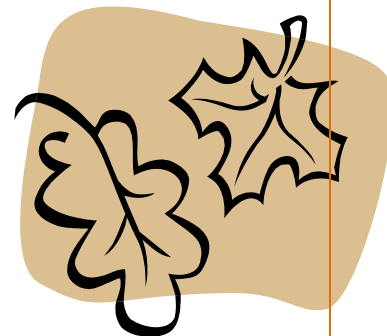
No air travel costs were incurred

Statutory Auditor:

*Mr. R.Balasubramanian
Partner, S.Ramanand Aiyar & Co.
708, Surya Kiran,
Kasturba Gandhi Marg,
New Delhi 110001*

Our Bankers:

*ICICI Bank, New Delhi
Indian Overseas Bank, Dehradun*



"and the leaves were telling secrets to the wind."

– Peter Mulvey

Audited Statement

CENTRE FOR ECOLOGY, DEVELOPMENT AND RESEARCH

BALANCE SHEET AS AT 31st MARCH 2013

		<u>CURRENT YEAR</u> <u>2012-13</u> Rs.	<u>PREVIOUS YEAR</u> <u>2011-12</u> Rs.
LIABILITIES			
FUNDS			
Corpus Fund		100,000	-
Reserve Fund			
As per last Balance Sheet		464,131	341,681
Add: Transferred from Income and Expenditure Account		(418,645)	122,450
		145,486	464,131
Current Liabilities			
Projects in Progress	1	1,283,443	1,361,515
Other Liabilities	2	8,250	-
TOTAL		1,437,179	1,825,646
ASSETS			
Fixed Assets			
Furniture			
Gross Block		373,912	351,502
Less: Depreciation	3	63,958	62,290
Net Block		309,954	289,212
Current Assets, Loans and Advances			
Current Assets			
Cash and Bank Balances			
With Scheduled Banks			
In Savings Account	4	1,050,280	1,511,415
Cash in hand		-	1,219
Tax Deducted at source		19,900	23,800
Advance to others		57,045	-
TOTAL		1,437,179	1,825,646

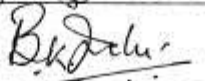
Significant Accounting Policies and Notes - Schedule 5

In terms of our report of even date annexed.


Chairman



Vice Chairman



Executive Director



For S. Ramanand Aiyar & Co.
Chartered Accountants
Firm Registration No - 000990N



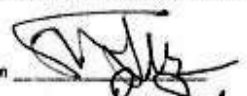


R. Balasubramanian
Partner
Membership No. 080432
New Delhi

03 JUN 2013

	CURRENT YEAR		PREVIOUS YEAR	
	2012-13		2011-12	
	Rs.		Rs.	
INCOME				
Projects in progress brought forward				
Bio-Stimulants	259,417			
Himmothan - IFIDP	155,948			
Himmothan - SMI, PSI Evaluation Project	33,998			
UBFDB			190	
NRTT	380,504		397,913	
NRTT-NEI-Workshop	193,820			
SRTT - SI	337,830	1,361,515	337,830	735,933
Project Funding				
Receipts during the year				
Yale Workshop			514,000	
Himmothan - SMI, PSI Evaluation Project	200,000		375,000	
Himmothan - NTFP			360,000	
Bio-Stimulants	225,000		275,000	
NRTT-NEI-Workshop			275,000	
Himmothan - IFIDP	420,000		480,000	
Carbon credits	177,700		174,401	
UBFDB			99,000	
UCOST Climate Change	308,000			
UCOST Workshop	150,000	1,480,700		2,552,401
Other Incomes				
Interest on Income Tax Refund	940			
Donations	110,000		80,000	
Consultancy	60,000		105,000	
Fixed Asset Cost Realised			39,573	
Administrative cost Realised	51,500		301,979	
Interest Income	47,392	269,832	47,396	573,948
TOTAL		3,112,047		3,862,282

EXPENDITURE				
Expenditure on Projects				
Bio-Stimulants	261,640		15,583	
Carbon credits			167,210	
Himmothan - IFIDP	451,329		324,052	
CINI - NTFP	31,030		360,000	
Himmothan - SMI, PSI Evaluation Project	159,395		341,004	
NRTT	92,773		17,409	
NRTT-NEI-Workshop	101,355		81,180	
UBFDB			99,190	
UCOST Climate Change	308,000			
UCOST Workshop	150,000			
Yale Workshop			518,108	
General Expenses				
Consultancy & Honourarium	45,500			
Depreciation (Schedule - 3)	63,958		62,290	
Travel and Conveyance	11,284		28,280	
Office Expenses	50,795		17,598	
Communication Expenses	30,378		36,606	
Printing & Stationery	368		9,473	
Rent	80,327		68,460	
Repair & Maintenance	17,216		9,381	
Employee Costs	345,550		208,848	
Water and Electricity	45,508		13,210	
Other Expenses	345		2,429	
	2,247,249		2,378,317	
Balance		854,798		1,483,965
Loss Transferred to Project in Progress (As per Schedule - 1)	TOTAL	1,283,443		1,361,515
Surplus (Deficit) transferred to Reserve Fund		(418,645)		122,450

Significant Accounting Policies and Notes - Schedule 5

Chairman 
Vice Chairman 
Executive Director 

In terms of our report of even date and in terms of our report of even date annexed.

For S. Ramanand Aiyar & Co.
Chartered Accountants
Firm Registration No. - 0005901

R. Balasubramanian
Partner
Membership No. - 080432
New Delhi

Date: 03 JUN 2013



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