



WWF

REPORT

IND

2014

# Annual Activity Report 2013

“Save the Environment and Regenerate Vital Employment”  
(Project SERVE), Darjeeling

A joint initiative of Projektwerkstatt Teekampagne-Germany and WWF-India

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# FOREWORD

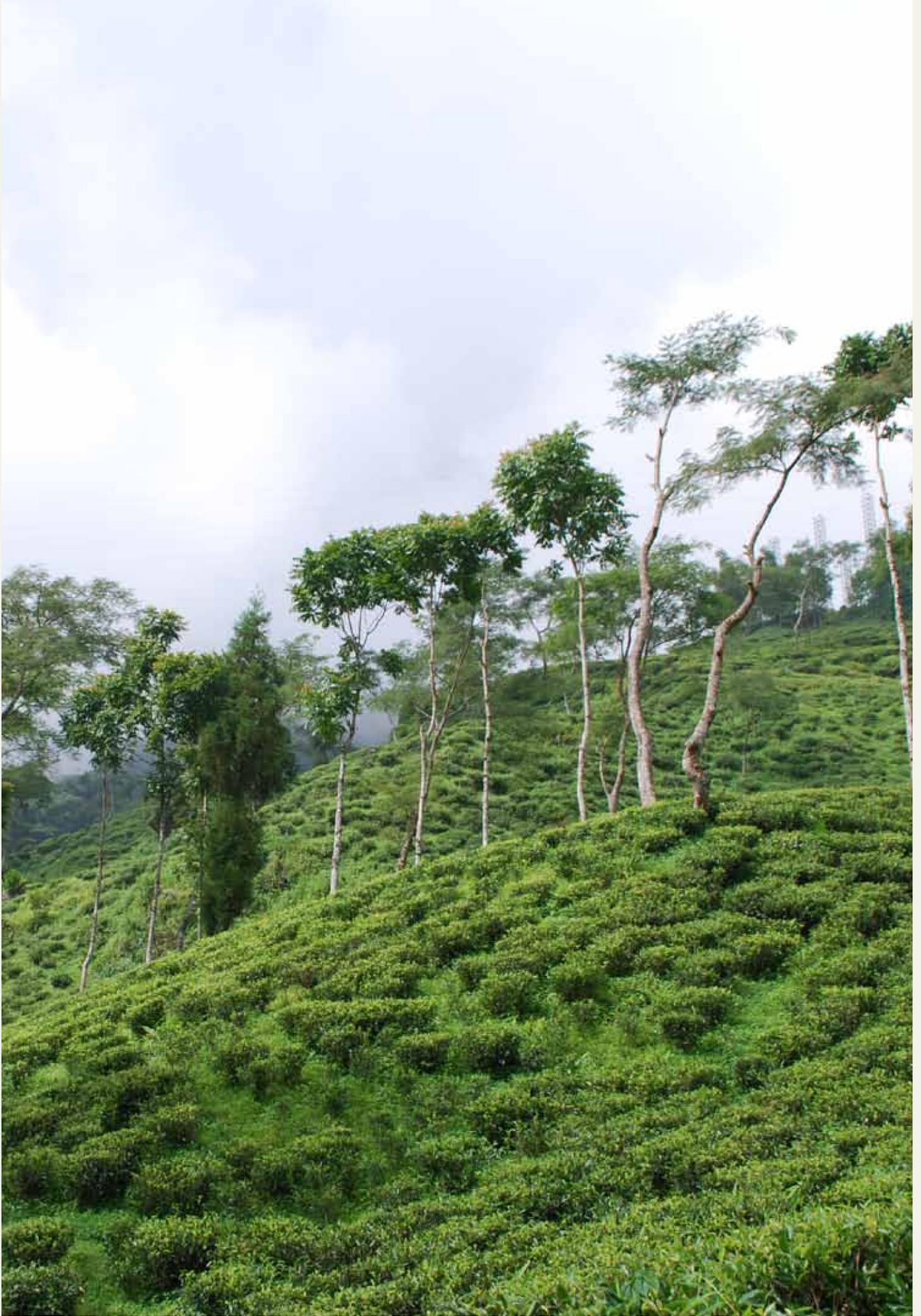
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“The happiest man is he who learns from nature the lesson of worship”  
--Ralph Waldo Emerson

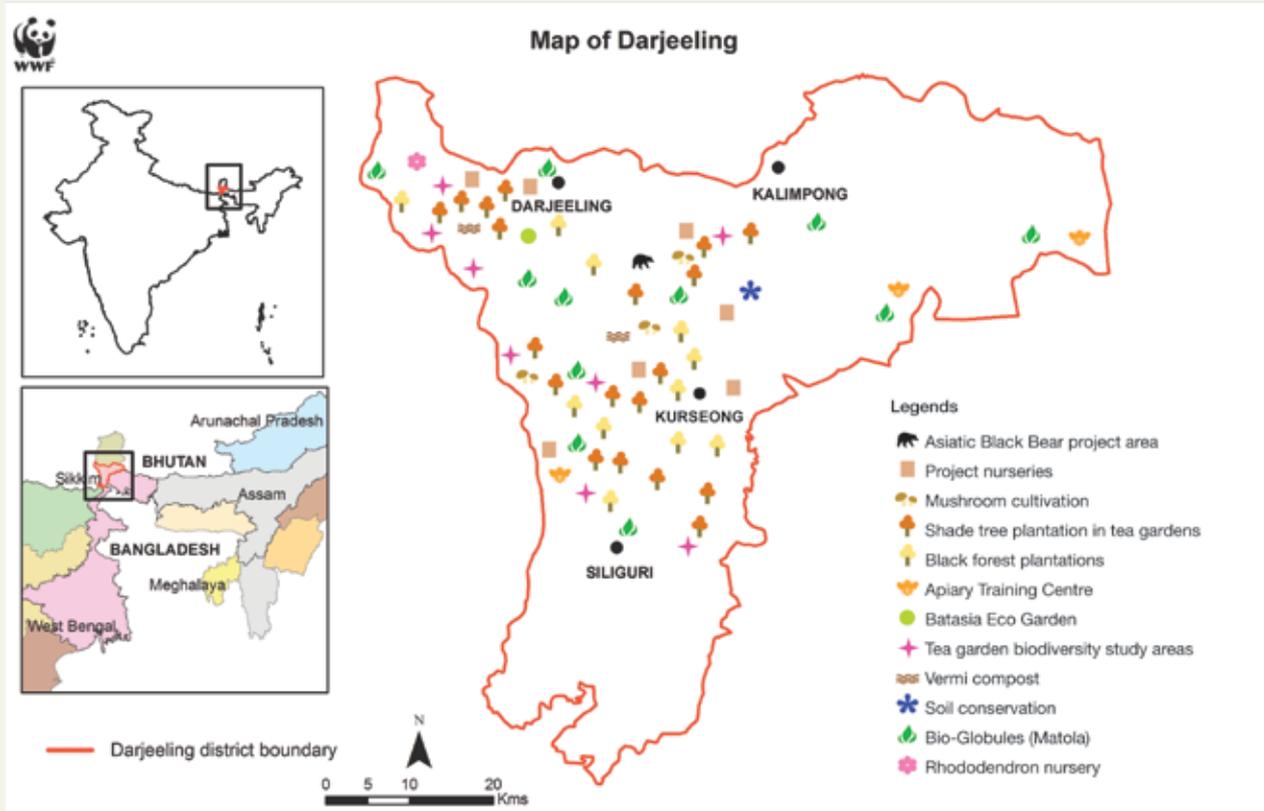
The effects of the global climate change can be seen everywhere, they do not spare even the remotest region. The World Wide Fund for Nature recognized the Eastern Himalayas as one of its priority places in the world. Home to sacred natural sites and to rare species as well as the source of freshwater for millions of people. I am grateful that in this program our SERVE project is considered one valuable piece of mosaic. Let us work together and remember that a lot of mosaics will form a beautiful piece of art for all of us to cherish. Thanks to the team of SERVE for their wonderful work and for allowing all readers to take a glimpse into their daily work by this report.



Prof. Dr. Günter Faltn  
Projektwerkstatt GmbH/Teekampagne



# AREA PROFILE



## Location

Darjeeling District, West Bengal, India

## Total Area of the District

3148.74 Sq Km.

## Geographical Location

27° 16' 05" & 26° 27' 10" N Latitude and 88° 53' 0" & 87° 59' 30" E Longitudes

## Altitudinal variation

130 m– 3660 m

## Geological formation

The rocks forming the hills covered by the forest are mostly crystalline gneisses, granites or metamorphic and schist.

## Physical features

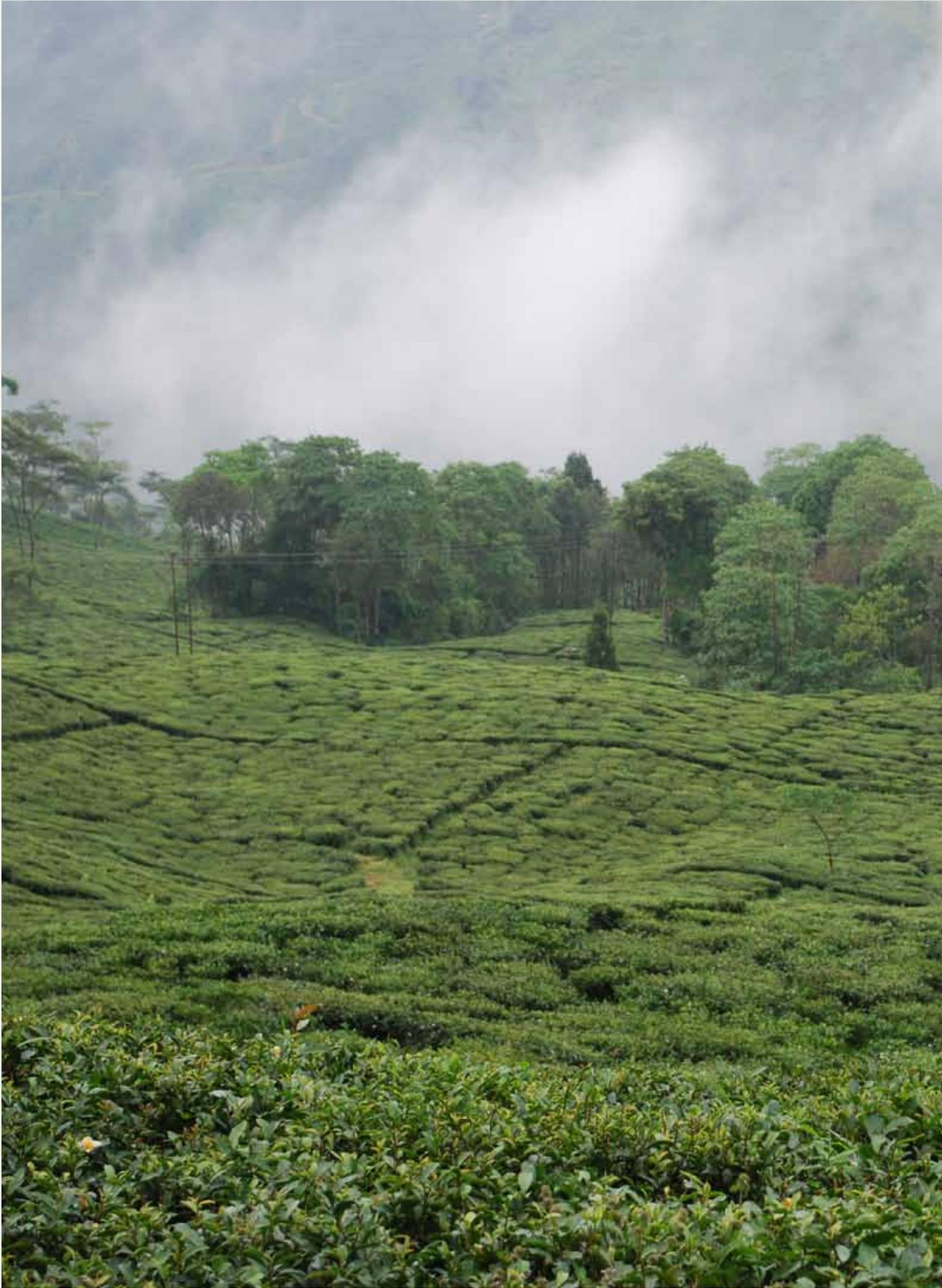
Darjeeling hills are divided into two by the deep gorges of the river Teesta.

To the east of it, lie the Kalimpong hills, with mountain peaks rising to over 2000m. Rivers radiate in all directions from these hills and flow into the Teesta. Tiger hill is the tourist hub and the following spurs radiate from it in all directions:

1) Darjeeling ridge to the north, 2) Takdah spur to the east 3) Dowhill ridge to the south and 4) Ghoom ridge to the west.

## Soil Texture

Brown earth soil here is mainly sandy loam and porous with poor holding capacity. Soil reaction is acidic (pH 4.2-5.8) in most places. Erosion of soil and leaching of bases is heavy. Micronutrient deficiency is common.





# I INTRODUCTION

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Solely funded by Projektwerkstatt Teekampagne, Germany, Project SERVE (Save the Environment and Regenerate Vital Employment) is the brainchild of Prof. Dr. Günter Faltn, a tea entrepreneur who proposed the idea of working towards the conservation of the Darjeeling Hills, where tea production is a main source of income for the local community. Project SERVE was envisioned and created in 1992 and was thereafter entrusted to WWF-India for its implementation in 1996. Since its custodianship, WWF-India and the Darjeeling Field Office have been committed towards the conservation of this floral and faunal habitat as an overall objective under this project.

Darjeeling is known worldwide for the inimitable quality of tea that it produces, to the point that it has grown into its own globally recognizable brand. Darjeeling itself lies in the Eastern Himalayas in an area classified as a biological hotspot region. Recently, the sanctity of these hills have been under severe human pressures due to growing population settlements and deforestation both of which ultimately lead to an inevitable loss of floral and faunal habitat, soil erosion, water crises, loss of water catchment areas, drying of springs, unmanaged tourism, unmanaged waste, unemployment, volatile political situations and a host of other undesirable consequences. Given these dire circumstances Project SERVE fulfills an important vital role in advocating for conservation of the environment, as well as working towards its implementation through activities such as reforestation projects on degraded areas which can in turn will lead to a chain reaction that prevents soil erosion and landslides, improves water catchments, causes rejuvenation of springs and in future years ultimately restores and perhaps creates a brand new floral and faunal habitat.

## II PROJECT OBJECTIVES

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The primary objective of Project SERVE is to reinvigorate the environment of the Darjeeling hills with the active participation of the general public, government officials, local community members, nature club students and teachers of schools, local NGOs, tea garden management and media persons.

In addition, the project has outlined the following four objectives:

1. Ecological restoration of the Darjeeling Hills by improving the natural habitat.
2. Livelihood and income generation through reforestation and farming based on people's knowledge.
3. Environment education and awareness among local communities and students on environment and biodiversity conservation

### **Project Activities**

#### **OBJECTIVE 1: Ecological Restoration**

The plantation of indigenous plant species is a major component of Project SERVE for WWF-India in Darjeeling. Since the inception of this project in Darjeeling, a total of 29,49,513 different saplings have been planted in the area including shade tree species. During the 2013, Project SERVE undertook the following Ecological restoration activities, which mainly include raising the required saplings in nurseries established at community level and buying back the saplings for plantation at various sites, as elaborated below:

##### **1.1: Nursery raising**

Under Project SERVE, nurseries have been established for raising indigenous plant species by extending support to interested farmers. Continued support was provided to 9 existing nurseries through the provision of requisite equipment such as agro nets, silpauline, water pipes, bamboos, polypots, seeds etc. These materials have been provided on a demand basis to nurseries whenever as and when they have been required. In 2013 alone, a total of 70,310 saplings of indigenous species were acquired from 9 nurseries for plantation at various sites, through this activity.

The Mahananda Forest Range located in the lower belts of Darjeeling along the river Teesta, offers a good habitat to a variety of subtropical species including the Great Hornbill, a near threatened species of bird. With an objective to work for conservation of this species, Project SERVE has partnered with a local field based organization, the Lanku Valley Society for Biodiversity Conservation (LVSBC), and has created plans for the plantation of fruit bearing trees within the village and adjoining area which is frequented by these birds. To fulfill this objective in 2013, a nursery was established at Lanku village in collaboration with LVSBC. The requisite training was also provided on nursery management to the locals prior to setting up the nursery with a learning



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Nursery



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Block forest plantation workers

visit organised to Chatakpur nursery in which 8 villagers participated. Following the training, one nursery was set up at Lanku village which is currently raising 5000 - 6000 different tree species including fruit bearing trees. The saplings raised in this nursery will be used for plantation year for 2014 within the village on private land as well as in the adjoining forest areas.

Project SERVE provides certain targets for the number of saplings to be raised in these nurseries which are required for plantation activities undertaken under the project. Farmers derive income from the sale of these saplings back to the project. Once established, most nurseries however raise saplings beyond project requirements for sale to other parties, which helps bring in additional income to the farmers.

Annexure 1- Details of nurseries of project SERVE and saplings supplied on 2013

Annexure 2- Lists of saplings raised at project nurseries during 2013

## **1.2: Block Forest Plantation**

Block Forest Plantation (BFP) is one of the major activities of Project SERVE. Priority for plantation is given to degraded areas that are landslide prone, areas that are important for water conservation and are potential floral and faunal habitats.

In 2013, plantation activities were undertaken in 4 new areas of Phoobsering Tea Estate, Naya busty village, Chatakpur Railway Siding area and Lanku valley village, of which Lanku is a newly created plantation site. These areas mainly cover landslide and degraded areas, while Lanku being a drought prone and dry belt the plantation also has the objective of rejuvenating the village water sources. In each of these new areas, approx 5 hectares were covered for plantation of indigenous species like *Magnolia sp.* (Chap), *Syzygium tetragonum* (Kaphal), *Alnus nepalensis* (Utish), *Juglens regia* (Okhar), *Eriobotrya petiolata* (Maya), *Castanopsis indica* (Katus), *Rhododendron sp.* (Gurans), *Symingtonia populnea* (Pipli), *Daphniphyllum himayense* (Lal Chandan), *Termenelia myriocarpa* (Panisajh), *Spondias axillaris* (Lapsi), *Syzygium operculutam* (Kyamuna), *Acer campbelli* (Kapas) etc.

The saplings for this initiative were supplied from nurseries established under Project SERVE at Chatakpur, Chamong, Phoobsering, Tonglu and Paschim Village and the plantation activity involved around 45-50 community members from the village sites.

Maintenance of earlier plantations form an important factor for the survival of saplings and every year Project SERVE invests time and energy into maintaining sites that were reforested in the previous years. In 2013, along with plantations undertaken to cover new areas in the Darjeeling Hills, maintenance of old plantations from year 2010, 2011 and 2012 were carried out at Gorabari Landslide area, Phoobsering village, Chatakpur and Naya busty. The activities carried out during maintenance included cleaning of weeds and infilling of new saplings on the plantation site.

Annexure 3- Details of Block Forest Plantation 2013



Shade tree  
plantation at one  
of the Tea Garden

### **1.3: Shade Tree Plantation**

The beneficial effects of shade trees, mainly of leguminous species in tea plantations has long been realized, and shade tree plantation in tea gardens forms one of the activities of Project SERVE. This serves a dual purpose with the area being reforested and improves the quality of tea at the same time.

Since the past years, Project SERVE has been supporting tea gardens improve the quality of tea by providing shade tree saplings for plantation. In 2013, 2200 numbers of shade tree saplings of Albizzia sp and Melia azederach were supplied to Seeyok tea gardens for plantation.



Batasia eco-garden

#### **1.4: Maintaining the Batasia Eco-Garden**

As in previous years, under Project SERVE in 2013, WWF- India undertook the maintenance of the Batasia Eco- Garden. As Batasia Eco-Garden is a main hub for tourists as well as locals, with the objective of raising awareness about the importance of medicinal plants that are locally available small plot dedicated for cultivating medicinal plants of the region has been developed in a corner of the eco- garden.

## OBJECTIVE 2: Livelihood and income generation

### 2.1 Promotion of mushroom cultivation

Investing in mushroom cultivation is a proven source of alternative income for small farmers, and WWF –India under Project SERVE has been supporting communities in taking up this enterprise. In 2013, Project SERVE focused on implementing this at Rangbull Village, which lies in the fringe of the Senchal Wildlife Sanctuary. In the previous year, a women’s group from the village was taken on a learning visit to Rampuria Forest Village. This year a training programme for the same women’s group was provided on cultivation of mushrooms, with additional support for setting up a mushroom farm with all the required materials for mushroom cultivation for the group. Mushroom cultivation helps villagers sell their produce to the nearby towns and generate income for their livelihood. This in turn has compensated the loss of income from crop damage caused by different animals that usually venture in their agricultural fields from the sanctuary.



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Mushroom Cultivation at Rangbull Village



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Bio-Briquette traing at Marget's Hope TG

## 2.2: Popularization of Bio-Briquette as an alternative fuel

For the last 4 years, under Project SERVE, one of the most successful initiatives has been that of popularization of bio briquettes, which have been highly successful as an alternative to fuel wood. Within the span of four years this initiative has had an outreach to 52 villages including tea gardens within Darjeeling Hills. Trained community members from these villages have also been invited as training personnel to initiate similar ventures in the neighboring states of Sikkim and even in the Sunderbans area of West Bengal.

In year 2013, training on bio-briquette creation along with a bio-briquette making machine was provided to villagers from Margaret's Hope tea garden. A total of 16 participants were very receptive to the initiative.

Annexure 4- List of villages where training on bio briquette has been given in past 4 years

## **2.3: Promotion of bee keeping with farming communities**

Since the inception of Project SERVE in Darjeeling, the promotion of apiculture as an alternate source of livelihood has become a major activity. The objective of this programme is to provide technical training leadership and skill development to farmers and enhance their income through honey production. It also aims to improve the environment of Darjeeling hills as bees play an important role as a pollinator among other pollinating agents.

A total of 40 participants from different villages of Sirubari Tea Estate, Goomtee, Jungapana and Bansgaray were trained in bee keeping in year 2013 at Mahanadi Village. Project SERVE conducted a 3-day technical training workshop for the farmers in two different phases, one component consisting of theory and the other practical. Apiary equipment such as ISB Newton type bee box 10F size, honey extractor machine, rubber hand gloves, bee veil, knife for comb cutting, queen gate standard, smoker, queen cage and drone door among other equipment were provided to these participants

This initiative has been a good source of income for the villagers Darjeeling Hills, and the demand for honey has increased over the years. Project SERVE's initiative to help in marketing of the honey produced by the farmers has helped them in fetching a higher price on the market. Furthermore, brochures published to raise awareness on the importance of honey proved to enhance the popularity of these products as well. Prior to the initiative, the price of honey for 750ml was Rs. 120 and the current price stands at Rs. 500 for the same quantity.

Annexure 5: List of Villages and participants for Apiculture Training at Mahanadi Village.

## **OBJECTIVE 3: Environment Education and Awareness**

### **3.1: Education Programme with schools**

The education programme run under Project SERVE in Darjeeling, has become popular and is grounded with nature clubs that were formed earlier within Darjeeling town schools taking their own initiatives to organize awareness programmes. Since the last 2 years, the focus for environment education component has shifted to have an outreach towards rural areas.

A plantation programme for school children and villages' youths was organized at Lanku valley in collaboration with Lanku Valley Society for Biodiversity Conservation on June 5, 2014 to observe World Environment Day. A similar programme was also organised within Darjeeling town wherein WWF supported the plantation initiative taken up by Springdale School.



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Bee keeping training programme



Plantation on WED by Springdale school at Mall Road

### **3.2: Awareness programme with other stakeholders**

WWF-India participated in the Wildlife Week Celebration organized by Wildlife Division II of the Forest Department at Jalpaiguri. Posters created by WWF on the flora and fauna of the region were displayed and distributed at a stall set up for awareness generation of the participants, who were mostly community members and school students from the locality.

WWF- India also participated in the Krishi Mela (Agricultural Fair) organised by the Gorkhaland Territorial Administration from January 13 – 26, 2014 wherein awareness on conservation of environment, bio-briquette and apiculture programmes being implemented under Project SERVE was demonstrated to all visitors. It served as a good exercise to raise awareness amongst visitors as well as the District administration about the activities being undertaken and building a healthy relationship with them.



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*Rhododendron cinnabarinum*

## III ANNEXURES

### Annexure 1:

Details of nurseries of project SERVE and saplings supplied on 2013

S.No.	Name of Farmer	Nursery site	Total seedling supplied	
1	Kalpana Sherpa	Chatakpur	15660	
2	Lochan Rai	Chatakpur	10000	
3	Nima Dorjee Glan	Chatakpur	6200	
4	Rakhi Tamang	Chatakpur	5000	
5	Sumi Sherpa	Paschim forest village	4000	
6	Suren Tamang	Chamong	15000	
7	Bir Bhadur Jogi	Phoobsering	10000	
8	Tshering Sherpa	Tonglu	2250	
9	Pawan Subba	Bungkulung	2200	Shade tree
		<b>Grand Total</b>	70310	

**Annexure 2:**

Lists of saplings raised at project nurseries during 2013

S. No.	Local name	Botanical name	Uses/ Purpose
1	Kapasi	<i>Acer campbelli</i>	Agricultural impliment, fodder, timber, furniture, plywood
2	Putli	<i>Acer laevigata</i>	Timber, fruit, fodder, agricultural impliment
3	Tata siris	<i>Albizzia Lebbek</i>	Timber, flower, shade tree
4	Seto siris	<i>Albizzia procera</i>	Timber, flower, shade tree
5	Utis	<i>Alnus nepalensis</i>	Timber, soil conservation
6	Katus	<i>Castonopsis indica</i>	Timber, fruit, Charcoal, agricultural impliment
7	Sinkowlo	<i>Cinnamomum obtusifolium</i>	Timber, fodder, medicine
8	Cupress	<i>Cupressus sp</i>	Timber, furniture
9	Dhupi	<i>Cryptomeria japonica</i>	Timber
10	Lal Chandan	<i>Daphniphyllum himalayense</i>	Timber, firewood, furniture, fruits
11	Badrasae	<i>Elaeocarpus lanceaefolius</i>	Timber, fruit, medicine
12	Maya	<i>Eriobotrya petiolata</i>	Firewood , Fodder
13	Pangra	<i>Entada scandens</i>	Fruit
14	Okhar	<i>Juglans regia</i>	Timbr, furniture, medicine,fruits
15	Lapche Kawlo	<i>Machilus edulis</i>	Timber, fruit, medicine
16	Chiplae Kawlo	<i>Machilus gammieana</i>	Timber,charcoal
17	Goge Chap	<i>Magnolia campbellii</i>	Timber, foliage, flower
18	Bogana	<i>Melia azedarach</i>	Foliage, pesticide, fruits, shade tree
19	Tetae Chap	<i>Michelia cathcartii</i>	Timber, fodder,furniture
20	Mitae Chap	<i>Michelia exelsa</i>	Timber,furniture, fruits, flower
21	Payoon	<i>Prunus ceracoides</i>	Flower,fruits, fodder
22	Arupatae	<i>Prunus nepaulensis</i>	Timber, furniture, foliage,flower
23	Aru	<i>Prunus persica</i>	Fruit,
24	Buk	<i>Quercus lamellosa</i>	Timber, furniture,foliage, flower, fodder, fruit, charcoal
25	Phalant	<i>Quercus lineata</i>	Timber,fodder,fruit, charcoal
26	Adkowlo	<i>Quercus spicata</i>	Timber, firewood, furniture, fruits
27	Lali Guras	<i>Rhododendron arboreum</i>	Firewood,medicine, flower
28	Gagun	<i>Saurauria nepalensis</i>	Fodder, fruit
29	Chilawnae	<i>Schima wallichii</i>	Plywood
30	Lapsi	<i>Spondias axillaris</i>	Fruit, firewood,

31	Pipli	<i>Symingtonia populnea</i>	Timber,fodder,foliage,charcoal
32	Kyamuna	<i>Syzygium operculutam</i>	Fruit, firewood, fodder
33	Khapal	<i>Syzygium tetragonum</i>	Fodder,fruit
34	Pani Sajh	<i>Terminalia myriocarpa</i>	Timber, furniture, plywood, fodder,flower
35	Harra	<i>Terminalia chebula</i>	Charcoal
36	Barra	<i>Terminalia belerica</i>	Charcoal, tanning, fruit

**Annexure 3:**

Details of Block Forest Plantation 2013

S.No.	Plantation Site	Area in Hec	Year of Plantation	Total seedling Planted	Remark
1	Chatakpur Railway Siding	5	2013	13000	New creation
2	Phoobsering	5	2013	12800	New creation
3	Naya Busty	5	2013	13500	New creation
4	Lanku	5	2013	12300	New creation
5	School		2013	800	Free distribution
6	NGO		2013	850	Free distribution
7	Seeyok Tea estate		2013	2200	Shade tree
8	Chatakpur Railway Siding	10	2012	4200	Maintenance
9	Phoobsering	5	2012	2360	Maintenance
10	Naya Busty	10	2012	3500	Maintenance
11	Chatakpur Railway Siding	8	2011	2100	Maintenance
12	Phoobsering	5	2011	1200	Maintenance
13	Naya busty	15	2011	1500	Maintenance
	<b>Total</b>			<b>70310</b>	

**Annexure 4:**

List of villages where training on bio briquette has been given in past 4 years

S. No.	Name of Village	No of Participants	Year
1	Reshep	17	2010
2	Rambi		
3	Chatakpur		
4	Rampuria		
5	Naya Busty		
6	Dabaipani		
7	Yanku		
8	Sumandhura		
9	3rd Mile		
10	Labdha		
11	Paschim		
12	Rajahatta		
13	Upper Junction Hatta		
14	Upper Rangbull		
15	Lower Rangbull		
16	Dhotrey		
17	Bungkulung	36	2011
18	Phoobsering TG	11	
19	Lingia TG	44	
20	Marybong TG		
21	Pussimbing TG		
22	Tukdha TG		
23	Chamomg TG		
24	Nagarifarm TG		
25	Dhejay TG		
26	Shree Dwerika TG		
27	Ging TG		
28	Soom TG		
29	Tumsong TG		
30	Gorubathan block	38	

31	Sirikhola	38	2012
32	Upper Sepi Busty		
33	Bich Gaon		
34	Dara Gaon		
35	Sepi Busty		
36	Rishi Haat	15	
37	Dhan Man Dhura, Singtam TG	11	
38	Singla Bazar	21	
39	Paschim Forest Village	23	
40	Limbu Busty	40	
41	Chenga Busty	38	
42	Upper Mamring	20	
43	Jaldaka Govt School	195	
44	Gorubathan	50	
45	Giddabling	15	
56	Soureni Forest Village	26	
47	Sanibaray Busty	15	
48	Dalim Forest Village	18	
49	Mayalu Busty	15	
50	Simsary Busty	12	
51	Ahalay Busty	12	
52	Marget's Hop TG	16	2013

**Annexure 5:**

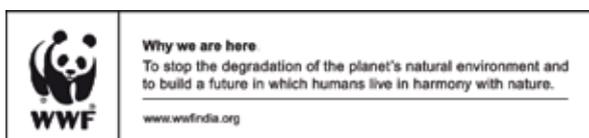
List of villages and participants for Apiculture Training at Mahanadi Village

S.No.	NAME OF VILLAGE	NO of Participant
1	Sirubari tea estate	9
2	Goomtee	11
3	Jungpana	10
4	Bansgary	10
	<b>Total</b>	<b>40</b>



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Plantation programme by School students and youths at Lanku



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