

BOTANICAL SURVEY OF INDIA

**ANNUAL
RESEARCH
PROGRAMME
*2014 – 2015***



**भारतीय वनस्पति सर्वेक्षण
BOTANICAL SURVEY OF INDIA**

**MINISTRY OF ENVIRONMENT & FORESTS
GOVERNMENT OF INDIA**

INTRODUCTION

BSI plans to undertake 118 field tours under 117 projects (including 31 new projects) for collection of plant specimens/ materials for floristic, ethnobotanical and pharmacognostical studies on flowering and non-flowering plants covering all the four biodiversity hotspots, viz., the Himalaya, the Indo-Burma, the Western Ghats-Sri Lanka and the Sundaland during the proposed period. This will cover bio-geographical regions, namely, Western Himalaya, Eastern Himalaya, North-East India, Arid, Semi-Arid, Gangetic Plains, Deccan Peninsula, Western Ghats and the Coastal Region covering Lakshadweep Islands and Andaman & Nicobar Islands. The studies will also cover ecological aspects, population status of Endemic, Endangered and Threatened (EET) species and GIS mapping of floral species in 31 protected areas and 1 fragile ecosystem where 46 and 1 field tours will be conducted respectively. Floristic Survey of 12 sacred groves spreading over four districts of Andhra Pradesh will be done and their flora will be documented. In addition, 19 field tours for the collections of germ-plasm of threatened, endemic and economically important species for ex-situ conservation will also to be undertaken. Apart from that, 34 herbarium consultation tours for identification of critical specimens will also be conducted in different Herbaria, both within and outside BSI.

Besides, studies will be carried out on the impact of Kedarnath Natural Disaster on the diverse flora of the region with special reference to rare, medicinal, and threatened species. The survey and assessment of growing stalk of economic bamboos of West Bengal will also be taken up this year as requested by the West Bengal State Council of Science & Technology.

The taxonomic revision of 'tree ferns' will be taken up and field collections will be made. Apart from that, revisionary studies on genera *Lepisorus* (Polypodiaceae), *Fimbristylis* (Cyperaceae) and *Riccia* (Bryophytes). Taxonomic Revision of *Bambusoideae* (*Poaceae*) in India, family Bignoniaceae under national flora and family Gesneriaceae of North-eastern region will also be carried out during the period. The state floras of Bihar, Chhattisgarh, Jharkhand, Kerala, Nagaland (checklist), Uttarakhand and West Bengal will be continued for documentation.

Dang District of Gujarat and Koraput, Jajpur, Deogarh, Ganjam and Balasore districts of Odisha will be focused for ethnobotanical studies. The project on habitat analysis and population status of ca 300 RET species of Orchidaceae in Eastern Himalaya has been rechristened as Red-listing of Orchids of Eastern Himalaya (Entire Sikkim, Darjeeling district of West Bengal and Arunachal Pradesh excl. Changlang and Tirap districts).

Palynotaxonomic studies on family Lauraceae in India, and pollen/seed morphology on species of Bignoniaceae, Orchids, *Lepisorus*, *Andrographis* and *Ficus* and SEM studies on the spores of liverworts, hornworts and mushrooms will continue.

Among non-flowering plants, floristic studies on Pteridophytes, liverworts and hornworts (Sikkim), Mosses (Darjeeling) Lichens (Rajasthan, Gujarat, Kutch and Nicobar Islands), Fungi (foliicolous of Sikkim as well as wood-rotting of Rajmahal Hills) and Algae (periphytic as well as freshwater of Jharkhand and AJCBIBG, Howrah respectively) will continue.

The neutraceutical studies of wild edible plants of North East India and Pharmacognostic studies on medicinal Aconites will also be continued this year.

20,000 herbarium specimens will be barcoded and digitized along with their label data.

35 projects will be completed by the end of this period.

Maintenance and augmentation of various herbaria, gardens and museum; documentation of phenological data on flowering and fruiting of species in different BSI gardens and advisory services and dissemination of information relating to plant diversity of the country will be attended as routine duties.

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
1.	Grass Flora of Arunachal Pradesh with GIS mapping	Dr. Manish Kandwal, Scientist C	2012 – 2017	<ul style="list-style-type: none"> • No. of Field Tours: 5 • No. of Herbarium Tours: 2 • Field nos. collected: ca. 1200 • Field nos. identified: ca. 300 	<p>Q1. Identification of earlier collections.</p> <p>Q2. Field tour to Siang district during September 20 to October 05, 2014.</p> <p>Q3. Field tour to Subansiri district in November – December 2014.</p> <p>Q4. Herb. & library consultation tour to BSD & DD from March 01 – 20, 2015.</p> <p>Total 02 Field tours and 01 HC Tour</p>
2.	Flora of Pakhui Wildlife Sanctuary, East Kameng district with GIS mapping (862 sq. km)	Dr. P. Satyanarayan, Scientist D Sri B. B. T. Tham, Botanist	2012 – 2017	<ul style="list-style-type: none"> • No. of Field Tours: 4 • No. of Herbarium Tours: 2 • Field nos. collected: 796 • Field nos. identified: 550 • No. of species identified: 247 nos. 	<p>Q1. Herbarium and Library consultation tour to ASSAM during July 14 – 25, 2014.</p> <p>Q2. Identification of earlier collections. Ca. 50 field nos.</p> <p>Q3. Field tour to Pakke Tiger Reserve/ Pakhui WLS during October 15 – 30, 2014.</p> <p>Q4. Identification of earlier collections.</p> <p>Q5. ca. 50 field nos.</p> <p>Total 01 field tour and 01 HC Tour</p>
3.	Taxonomic Study of family Polypodiaceae (ca. 100 spp.) of North East India with GIS mapping	Dr. V. K. Rawat, Scientist C	2012 – 2015	<ul style="list-style-type: none"> • No. of Field Tours: 1 • No. of Herbarium Tours: 1 • Field nos. collected: 356 • Field nos. identified: 172 • No. of species identified: 56 	<p>Q1. Herbarium and Library consultation tour to Patiala University, DD, CAL, ASSAM, during June 10 to July 5, 2014.</p> <p>Q2. Field tour to Arunachal Pradesh during August 5 – 25, 2014.</p> <p>Q3. Field tour to Manipur/Mizoram during October 06 – 30, 2014.</p> <p>Q4. Finalization and submission of mss.</p> <p>Total 02 Field tours and 01 HC Tour</p>
4.	Study of <i>Impatiens</i> L. (Balsaminaceae) of Arunachal Pradesh	Dr. Rajib Gogoi, Scientist C	2013 – 2016	<ul style="list-style-type: none"> • No. of Field Tours: 2 • No. of Herb. Tours: 1 • Field nos. collected: 40 • Field nos. identified: 18 • No. of spp. identified: 11 	Executing scientist will be joining as Indian Botanical Liaison Officer (IBLO) at Kew Gardens, UK

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
5.	Flora of East Siang District, Arunachal Pradesh with GIS mapping (ca. 4005 sq. km)	Dr. Manas Bhaumik, Scientist C	2013 – 2017	<ul style="list-style-type: none"> No. of Field Tours: 1 No. of Herbarium Tours: Field nos. collected: 411 Field nos. identified: 280 No. of species identified: 240 	<p>Q1. Field tour to Siang District during April 15 to May 10, 2014.</p> <p>Q2. Field tour to Siang District during September 20, 2014 to October 10, 2014.</p> <p>Q3. Herbarium and Library consultation tour to CAL, ASSAM & DD during October 20, to November 20, 2014.</p> <p>Q4. Identification and other curatorial works.</p> <p>Total 02 Field tours and 01 HC Tour</p>
6.	Flora of Lohit district and Flora of Kamlang Wildlife Sanctuary, Arunachal Pradesh with GIS mapping (11,402 sq. km incl. 7,631 sq. km. forest)	Mr. Souravjyoti Borah, Botanist	2013 – 2017	<ul style="list-style-type: none"> No. of Field Tours: 2 No. of Herbarium Tours: 1 Field nos. collected: 645 Field nos. identified: 300 No. of species identified: 171 	<p>Q1. Field tour to Lohit district during May 15 to June 20, 2014</p> <p>Q2. Processing and Mounting of specimens, Identification of earlier collections.</p> <p>Q3. Field tour to Kamlang Wildlife Sanctuary during October 05 to 30, 2014</p> <p>Q4. Herbarium and Library cons. tour to ASSAM during January 20 to February 10, 2015.</p> <p>Total 02 Field tours and 01 HC Tour</p>
7.	Introduction, conservation of Germ-plasm of Musa, Bamboos & Zingibers and documentation of phenology of garden plants	Sri B. B. T. Tham, Botanist	On going		Germplasm to be collected in regular tours and introduced at APRC, Itanagar or at Barapani, Shillong. Documentation of phenology of flowering and fruiting.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tours	2	3	4	0	9
Herbarium Consultation Tours	2	0	1	2	5

EASTERN REGIONAL CENTRE, SHILLONG

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
8.	Flora of Yangoupokpi Lokchao Wildlife Sanctuary, Chandel District, Manipur (184.80 sq. km) with ecological aspects, population status of endemics and GIS mapping <i>(New Project)</i>	Dr. A. A. Mao, Scientist E and Shri L. R. Meitei, Bot. Asstt.	2014 – 2018	Not applicable	Q1. Review of literature and available Herb. specimens Q2. Field tour during July 11 – 27, 2014 to the Govajang forest areas and Kwatha forest areas. Q3. Identification and documentation of species collected Q4. Field tour during January 10 – 26, 2015 to the Lailal Kuki Forest Areas & Kampeng forest areas Total 02 Field tours.
9.	Flora of Amchang Wildlife Sanctuary, Kamrup, Assam (78.64 sq. km) with ecological aspects, population status of endemics and GIS mapping <i>(New Project)</i>	Dr. A. A. Mao, Scientist E Km. Nandita Sharma, Sr. Preservation Asstt.	2014 – 2017	Not applicable	Q1. Review of literature and available Herb. specimens Q2. Field tour during August 11 – 27, 2014 to the whole accessible area of the sanctuary Q3. Identification and documentation of species collected Q4. Field tour during February 10 – 24, 2015 to the whole accessible area of the sanctuary Total 02 Field tours
10.	Taxonomic Revision of the genus <i>Riccia</i> (Marchantiophyta) in India <i>(New Project)</i>	Dr. S.K.Singh, Scientist C,	October 2014 – 2019	Not applicable	Q3. Study of literature & Herbarium specimens. Field tour during October 07 – 26, 2014 to Konkan region (Lonawala, Khandala, Purandhar, Mahabaleshwar, Panchgani, Satara, Shimoga, Thirthahalli, Agumbe, Udupi, Mangalore) Q4. Herbarium Study tour to National Botanical Research Institute, Lucknow University and Central National Herbarium (CAL) Total 01 Field tour and 01 HC Tour
11.	Flora of Eastern Nagaland (Mon, Tuensang, Kiphire & Longleng) with ecological aspects and GIS mapping Area: 8335 sq. km <i>(New Project)</i>	Dr. N. Odyuo, Scientist C; Dr. R. Daimary, Bot. Asstt.	2014 – 2019	Not applicable	Q1. Consultation of literature, examination and listing of specimens from ASSAM. Q2. Field tour to Namsa, Nyasia, Shangnyu, Chui, Longwa and Chenmoho Villages of Mon District during July 14 to August 03, 14. Q3. Field tour to Lapa, Tiru, Naginimara, Wangla, Borjan, Kongnyu, Wakching, Champang & Longching Villages of Mon District during November 10 to December 01, 2014. Q4. Specimen identification collected during Q2 & Q3. Total 02 Field tours

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
12.	Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of Selected Species of NE India <i>(New Project)</i>	Dr. Deepu Vijayan, Scientist B	2014 – 2017	Not applicable	<p>Q1. Local tour in nearby areas of Shillong.</p> <p>Q2. Local tour in nearby areas of Shillong.</p> <p>Q3. One tour to Lakhimpur, Assam for the collection of <i>Pyrenaria khasiana</i> in Dullung Reserve Forest during November 6 to 10, 2014</p> <p>Q4. Micropropagation, Phytochemical Screening of Medicinal Plants and Molecular Characterization of collected Species through:</p> <ul style="list-style-type: none"> • <i>Standardization of tissue culture protocol for RET medicinal plants</i> • <i>Preparation of plant extracts (hot water and solvent extraction) for phytochemical characterization</i> • <i>Qualitative and quantitative phytochemical analysis (Test for carbohydrates, proteins, flavonoids, phenols and tannins, glycosides, terpenoids, alkaloids, etc.)</i> • <i>Isolation, purification and characterization of the active constituents of the collected plants</i> • <i>Standardization of DNA extraction protocol for the collected species</i> • <i>Standardization of PCR protocol using RAPD, ISSR and ITS markers</i> • <i>Fingerprinting and electrophoresis of plant DNA using RAPD, ISSR and ITS markers</i> <p>Total 01 Field tour</p>
13.	Checklist for Flora of Nagaland 1500 species to be listed with updated nomenclature and distribution <i>(New Project)</i>	Dr. A. A. Mao, Sci. E Dr. N. Odyuo, Sci. C Sri. D. Verma, Bot. Asstt.	2014 – 2016	Not applicable	<p>Q1. Review of literature and study of Herb. Specimens at ASSAM and listing of ca. 375 species</p> <p>Q2. Study of relevant literature and available Herb. Specimens at ASSAM and listing of ca. 375 species.</p> <p>Q3. Study of relevant literature earlier published and available Herbarium Specimens deposited in ASSAM and listing of ca. 375 species.</p> <p>Q4. Study of relevant literature earlier published and available Herbarium Specimens deposited in ASSAM and listing of ca. 375 species. Finalisation of manuscript.</p>

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
14.	Flora of South Garo Hills Dist., Meghalaya with GIS mapping of Siju Wildlife Sanctuary (5.18 sq.km) Baghmara Pitcher Plant Wildlife Sanctuary(0.02 sq.km) Balpakram National Park (220 sq.km)	Sri Dilip Kumar Roy, Botanical Assistant	2012 – 2016	<ul style="list-style-type: none"> • No. of Field Tours: 3 • No. of Herbarium Tours: Nil • Field nos. collected: 906 • Field nos. identified: 400 • Field nos. documented: 308 	<p>Q1. Field tour during June 1 – 16, 2014 to the parts of Rangra Range, Mahadeo Range and Maheskhola Beat under BNP</p> <p>Q2. Field tour during Sep., 15 – 30, 2014 to the Core zone of Baghmara National Park.</p> <p>Q3. Field tour during Dec., 7 – 21, 2014 to the parts of Baghmara Range and Siju Range of South Garo Hills Forest Division.</p> <p>Q4. One Herbarium Consultation tour to CAL during March 01 – 20, 2015.</p> <p>Total 03 Field tours and 01 HC Tour</p>
15.	Flora of Murlen National Park, Mizoram (ca. 100 sq. km)	Dr. R. Kumar, Scientist B Sri Sachin Sharma, Botanical Assistant	2012 – 2015	<ul style="list-style-type: none"> • No. of Field Tours: 2 • No. of Herbarium Tours: Nil • Field nos. collected: 1148 • Field nos. identified: 571 • No. of species documented: 465 	<p>Q1. Herbarium Consultation tour to CNH during May 04 – 17, 2014.</p> <p>Q2. Identification & documentation of specimens</p> <p>Q3. Field tour to the core area of Murlen National Park during October 26 to November 15, 2014.</p> <p>Q4. Herbarium Consultation tour to CNH during January 11 – 24, 2015. Finalisation and submission of mss.</p> <p>Total 01 Field tour and 02 HC Tours</p>
16.	Bryoflora (Hepaticae & Anthocerotae) of Mizoram	Dr. S. K. Singh, Scientist C	2008 – 2014 (extended upto Sept. 2014)		Remaining liverworts and hornworts are to be inventorised. The sporoderm pattern of sporiferous materials are also to be studied under SEM.
17.	Flora of Laokhowa Wildlife Sanctuary Nagaon, Assam with ecological aspects, population status of endemics and GIS mapping (ca. 70 sq. km)	Dr.(Mrs.) Chaya Deori, Scientist C Sri S. R. Talukdar, Sr. Preservation Asstt.	2013 – 2016	<ul style="list-style-type: none"> • No. of Field Tours: 2 • No. of Herbarium Tours: Nil • Field nos. collected: 461 • Field nos. identified: 210 • No. of species identified: 170 	<p>Q1. Field tour to the sanctuary during April 28 to May 07, 2014.</p> <p>Q2. Identification and documentation of species collected</p> <p>Q3. Field tour to the sanctuary during December 15 – 24, 2014</p> <p>Q4. Identification and documentation of species collected earlier</p> <p>Total 02 Field tours</p>

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
18.	Micropropagation of RET plants of North East India	Dr. A. A. Mao, Scientist E Ms. Kangkan Pagag Bot. Asst.	2012 – 2017	<p><i>Cymbidium tigrinum</i>: Multiple shoot induction for <i>Cymbidium tigrinum</i> on MS medium done with addition of charcoal/ banana/coconut. Regular sub-culture was done. Observations noted, photographs taken. Healthy, green plantlets obtained. 97 plantlets were acclimatized. Cultures established <i>in vitro</i> are being maintained. An experiment to induce direct multiple shoot induction from the roots with different PGR combinations. Callus/ PLBs developed on the roots. Cultures established <i>in vitro</i> are being maintained. Observations noted and photographs were taken.</p> <p><i>Armadorum senapatianum</i>: Asymbiotic seed germination: MS media with 10% coconut extract, banana and 0.2 % activated charcoal. Seeds were inoculated for seed germinations. 100% seeds germination obtained. Seeds started to swell and PLBs developed. 1st subculture done. Data is being recorded regularly. Photographs taken.</p> <p><i>Ilex khasiana</i>: The cultures are being maintained and observed at regular intervals. Subculture done.</p> <p><i>Rhododendron coxianum</i>: Inoculation of <i>Rhododendron coxianum</i> seeds into different nutrient media containing different concentration of sucrose for <i>in vitro</i> seed germination was done. Obtained seedlings and somatic embryos.</p> <p><i>Paphiopedilum hirsutissimum</i>: Asymbiotic seed germination started in MS with 10% coconut and PLBs obtained</p>	<p><i>In-vitro</i> propagation of <i>Armadorum senapatianum</i> and <i>Rhododendron coxianum</i> to be taken up in the year 2014 – 15.</p>

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Work done so far	Quantifiable deliverables (targets) for 2014 – 2015
19.	Ex situ conservation of endemic, threatened and economically important plants of the North East India in the experimental gardens of ERC	Sri N. N. Rabha, Botanist Sri L. R. Meitei, Botanical Assistant	Ongoing	<ul style="list-style-type: none"> • No. of Field Tours: 2 • No. of Herbarium Tours: Nil • Field nos. collected: 108 • Field nos. identified: 77 • No. of species identified: 77 	<p>Q1. Field tour to Govajang, Kwatha and Lailal Kuki Forest Areas of Yangoupokpi Lokchao WLS, Chandel District, Manipur for collection of live plants of RET species during April 7 – 19, 2014.</p> <p>Q2. Field tour to Jaintia Hills, Meghalaya Saipung Reserved Forests (ca. 150 sq.km) and Narpuh Bl. I & II Reserve Forests (ca. 160 sq. km.) Saipung R.F. Narpuh Bl. I & II for collection of live plants of RET species during October 17 – 28, 2014. Also, recording of phenological data of plant species growing in Barapani Garden.</p> <p>Total 02 Ex situ conservation tours</p>

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	2	4	6	2	14
Herbarium Consultation Tour	1	0	0	3	4
<i>Ex situ</i> conservation Tour	1	1	0	0	2

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOK

Sr. No.	Name of the Project	Name of the executing scientist	Tenure	Work done so Far	Quantifiable deliverables (targets) for 2014 – 2015
20.	Red listing of Orchids of Eastern Himalaya (<i>Entire Sikkim, Darjeeling district of West Bengal and Arunachal Pradesh excl. Changlang and Tirap</i>) as per IUCN criteria. Previous name of the Project: Habitat analysis and population status of <i>ca</i> 300 RET species of Orchidaceae in Eastern Himalaya.	Dr. D. K. Agrawala, Scientist C	2013 – 2018	<ul style="list-style-type: none"> 766 orchid taxa have been listed from the study area and their distribution data compiled from available literature. One long duration field tour and two short tours at South district of Sikkim conducted and population of 60 taxa completed. 7000 herbarium specimens at CAL, BSHC, Lloyd Bot. Garden, Darjeeling, North Bengal University, Siliguri have been photographed to find the geo-coordinates for plotting the distribution map. Identity of 121 samples collected from the field tour and live samples available at SHRC campus garden has been fixed with digital images of plants and various parts. Red list assessment of 61 taxa of genus <i>Eria</i> (Orchidaceae) in India (with 44 taxa from Eastern Himalaya) has been completed. This may not be confused with the annual target or quantified annual output, because, the genus <i>Eria</i> was revised by the executing scientist for his Ph.D. work and all required data was available with him with which he could able to do the red list assessments. But mapping for all these taxa has not yet been done because the licensed version of ArcGIS software has not yet been procured. 	<p>Q1. Compilation of data collected during previous year (500 herbarium specimens will be studied in respect of their identity, geo-coordinates will be assigned and data will be entered in the excel sheet).</p> <p>Q2. Field tour to North Sikkim at Chungthang valley, Lachen valley, Thangu, Lachung valley and Mangan covering <i>c</i> 400 sq. km during August, 2014: [<i>Chungthang valley</i> (N- 27° 36' 45.8; E- 88° 37' 12.8); <i>Lachen valley</i> (N- 27° 45' 02.4; E-88° 32' 32.5); <i>Thangu</i> (N- 27° 53' 35.2; E-88° 32' 11.2); <i>Lachung valley</i> (N 27° 47' 24.4, E 88° 42' 29.3)].</p> <p>Q3. Herb. consultation tour to Itanagar and Tipi (Arunachal Pradesh) for study of specimens at ARUN, APFH, NERIST and OHT during December 2014 - January 2015.</p> <p>Q4. Compilation of information collected (500 herbarium specimens will be studied in respect of their identity, geo-coordinates will be assigned and data will be entered in the excel sheet).</p> <p>Total 01 Field tour and 01 HC Tour</p>

Sr. No.	Name of the Project	Name of the executing scientist	Tenure	Work done so Far	Quantifiable deliverables (targets) for 2014 – 2015
21.	Family Rubiaceae for Flora of India (Amplification of the description of <i>ca.</i> 65 poorly known species under Rubiaceae supplemented with illustration and possible photographs) (<i>New Project</i>)	Dr. Mohan Gangopadhyay, Scientist C	2014 – October 2015	The family Rubiaceae of India contains about 579 species belonging to 112 genera from India for which manuscript was submitted in June 2012. But to amplify the description of poorly known species and to prepare illustration a tour to CAL has been undertaken. The work is in progress. For the photographs of the living plants few local tours are proposed.	Q1. Two local tours to East Sikkim for photography of Rubiaceae. Identification of unidentified specimens at BSHC. Q2. Two local tours to North Sikkim for photography of Rubiaceae. Identification of unidentified specimens at BSHC. Q3. Two local tours to West Sikkim for photography of Rubiaceae. Identification of unidentified specimens at BSHC. Q4. Herbarium Consultation Tour to CNH (CAL) for illustration of Rubiaceae. Identification of unidentified specimens at BSHC. Total 01 Herb. Con. Tours & 06 local tours
22.	Flora of Shingba Rhododendron Wildlife Sanctuary with GIS mapping of EET species (<i>ca.</i> 43 sq.km.)	Dr. C. S. Purohit, Bot. Asstt.	2013 – 2014 (to be extended upto March 2015)	<ul style="list-style-type: none"> Studied and prepared list of herbarium of BSHC from Shingba WLS; All previously collected plants of Shingba WLS were identified; 155 taxa belonging to 175 field numbers were identified in collection of 2nd Quarter field tour; remaining under process. Description of 150 species has been finalized 21 color illustrations have so far been prepared based on live collection.	Q1. Identification of specimens collected from the previous field tours; Q2. Field tour to the sanctuary during August 18, 2014 to September 10, 2014 to cover following GPS position. Q3. Identification of collected plants; preparation of key to family, genera & species, , preparation of colour plates Q4. Finalisation and submission of manuscript with field guide Total 01 Field tour
23.	<i>Ex-situ</i> conservation of EET plants in the campus garden	1. Dr. Mohan Gangopadhyay, Scientist C 2. Dr. C.S. Purohit, Botanical Assistant	Ongoing	Phenology of 50 EET plants of the campus garden is being recorded weekly.	Documentation of phenological data on flowering and fruiting of species growing in the garden

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	2	4	2	0	8
Herbarium Consultation Tour	0	0	1	1	2

CENTRAL REGIONAL CENTRE, ALLAHABAD

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
24.	Floristic Diversity of Parvati Aranga Wildlife Sanctuary and adjacent Tikri forest area, Gonda, UP with ecological aspects, population status of endemics and GIS mapping (ca. 80 sq. km) <i>(New Project)</i>	Sri V. K. Singh, Botanical Assistant (under guidance of Dr. S. K. Srivastava, Scientist D, NRC)	2014 – 2017	Q1. Review of literature and consultation of herbarium specimens collected from the area. Q2. Field tour to the sanctuary for collection of plants. Processing, identification and documentation of specimens collected Q3. Completion of inventorisation of specimens collected in previous tour. Q4. Field tour to the sanctuary for collection of plants. Processing, identification and documentation of specimens collected Total 02 Field tours
25.	Flora of Chhattisgarh	1. Sri R. K. Singh, Botanist 2. Sri A. P. Tiwari, Senior Preservation Assistant <i>(Both the executing officials should together go on Field Tour and Herbarium Consultation Tour. Otherwise this will treated as dereliction of duty)</i>	2012 – 2017	Q1. Completion of identification, inventorisation and documentation of specimens collected in previous tours. Q2. Field tour to Raipur & Korba districts of Chhattisgarh during August – September 2014. Identification and Inventorisation of specimens collected. Q3. Continuation of identification of specimens collected. Q4. Herbarium Consultation tour to CAL for identification of unidentified specimens Total 01 Field tour and 01 HC Tour
26.	Floral Diversity of Upper Ganga Ramsar Site, Uttar Pradesh with ecological aspects and GIS mapping (ca. 267 sq. km)	1. Dr. (Mrs.) Arti Garg, Scientist C 2. Dr. (Ms.) Bhavana Joshi, Botanical Assistant <i>(Her application expressing her unwillingness to work on this project is uncalled-for and hence rejected by Director, BSI. She is to go on field tour along with the executing scientist as per schedule under this project. Otherwise this will be treated as dereliction of duty and action will be taken accordingly)</i>	2012 – 2016	Q1. Completion of inventorisation and documentation of specimens collected in previous tours. Field tour to Brijghat to Narora via Ghaziabad, Muzaffarnagar, Budaun and Bulandshahar. Q2. Identification of specimens collected and description of about 100 species with nomenclatural updating Q3. Identification of specimens collected and description of about 100 species with nomenclatural updating Q4. Herbarium consultation tour to CAL for identification of unidentified specimens Total 01 Field tour and 01 HC Tour
27.	Lichens of Rajasthan, Kutch and Gujarat	1. Dr. G.P.Sinha, Scientist D 2. Sri Rasanand Kar, Botanical Assistant	2012 – 2017	Q1. & Q2. Completion of inventorisation of specimens collected in previous tours. Q3. Field tour to Bhuj, Mandavi, Nakhatrana-Nalia-Jamnagar, Khambalia-Dwarka. Q4. Identification, inventorisation & documentation of specimens collected Total 01 Field tour
28.	<i>Ex situ</i> conservation of EET plants in the office garden	Dr R.K. Singh, Botanist	On going	Documentation of phenological data on flowering and fruiting of the species growing in the garden (List of species to be intimated)

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	2	1	1	5
Herbarium Consultation Tour	0	0	0	2	2

BOTANIC GARDEN OF INDIAN REPUBLIC, NOIDA

Sr No.	Name of the Project	Name of the Executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
29.	Seed storage behavior of seeds of various plant species growing in BGIR and their <i>ex-situ</i> conservation <i>(New Project)</i>	Dr. K.S. Dogra, Scientist B	Ongoing	Seeds from 25 plant species growing in the garden to be collected and following parameters to be studied: <ul style="list-style-type: none"> • Collection of seeds and development of protocols for their long term storage in the seed bank in BGIR from; • To measure the viability and percentage germination of seeds • To determine the storage behavior of seeds i.e. orthodox, recalcitrant and intermediate; • Measurement of moisture content of seeds and drying of seeds for storage
30.	Development of Database of Seeds of indigenous trees of BGIR, NOIDA			
31.	Protocol Development for germination of selected tree species of BGIR, NOIDA			
32.	Collection of plants for introduction in BGIR	Dr. Sheokumar, Scientist D Dr Sandeep Chauhan, Scientist C	Ongoing	<ul style="list-style-type: none"> • Plant collection tour in Q1 to collect the RET plants from Punjab and Himachal Pradesh for their introduction at BGIR for ex-situ conservation • Plant collection tour in Q3 to collect the RET plants from Rajasthan and Gujarat for their introduction at BGIR for ex-situ conservation <p>Total 02 Ex-situ conservation tours</p>
33.	Development of database of introduced trees of BGIR, NOIDA	Dr. Sheokumar, Scientist D	Ongoing	Collection & incorporation of the data in the database on the tree species introduced in the garden.
34.	Development of database of medicinal plants of BGIR, NOIDA	Dr. Sheokumar, Scientist D	Ongoing	Collection & incorporation of the data in the database on medicinal plants
35.	Documentation of phenological data of plants growing in BGIR, NOIDA	Dr Sandeep Chauhan, Scientist C Dr. K.S. Dogra, Scientist B	Ongoing	Documentation of phenological data of species growing in the garden (List of species to be intimated)

Nature of Tour	Q1	Q2	Q3	Q4	Total
<i>Ex situ</i> conservation Tour	1	0	1	0	2

NORTHERN REGIONAL CENTRE, DEHRADUN

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
36.	Kedarnath Natural Disaster – Studies on the impact on flora with special reference to Rare, Medicinal, and Threatened Species <i>(New Project)</i>	Dr S.K. Srivastava, Scientist-D, NRC Dr. G. P. Sinha Scientist D, CRC Dr P. K. Pusalkar, Scientist C, NRC Dr. B. S. Kholia Scientist C, NRC Dr. R. K. Gupta Scientist C, Hqrs. Dr. S. K. Singh Scientist C, ERC Dr. S. S. Dash Scientist C, HQRS Dr. Brijesh Kumar, Bot. Asstt., NRC	2014 – 2015	<p>01 Field Tour in Q2 by Multiple subject specialists</p> <p>Exact Place: Kedarnath Natural Disaster areas via Dehradun-Rishikesh-Rudraprayag-Guptkashi-Gaurikund-Kedarnath</p> <p>Tentative dates: 9th to 18th June, 2014 (Subject to non-clash with Panchayet Election in Uttarakhand due in June 2014)</p> <p>Objectives and Plan of Impact assessment:</p> <ol style="list-style-type: none"> 1. Assessment of present floristic diversity in Kedarnath environs: Disaster hit area – Gaurikund-Rambara to Chorabari tal (Gandhi Sarovar) 2. Impact Assessment [Negative impact]: Loss of Diversity Extinction (if any); Local extinction (if any); Population/abundance loss for perennials and ligneous flora; other incl. ecological impact (Habitat loss, loss of umbrella forest patch, etc.) 3. Impact Assessment [Positive Impact]: Creation of new habitats; Migration of species (from upper valley or invasion on newly vacated areas); New community formation (w.s.r. to invasive annuals); Increase in abundance (if any); Change in composition [in response to arrival or disappearance of stream] 4. Diversity assessment in vulnerable habitats/area: Landslide and Stone fall prone zone; Avalanche prone zone; Periglacial zone; River and alpine lake banks; Probable areas [demarcated for possible change in river course] 5. Threat assessment for floristic Diversity alone new trek route and impact: Anthropogenic impact (movement, new constructions, hotels, etc.); Other factors (non local livestock (Mules and horses) 6. Threatened flora and commentary on conservation measures
37.	Floristic Diversity and Phytosociological study of Simbalbara National Park, Himachal Pradesh with ecological aspects, population status of endemics and GIS mapping <i>(New Project)</i>	Dr. S. K. Srivastava, Scientist D Dr. M. R. Debta, Botanical Assistant	2014 – 2017	<p>Q1. Review of literature and consultation of herbarium specimens for listing of species from the area.</p> <p>Q2. Field tour to different compartments sanctuary for collection of plants during August 18 to Sept. 3, 2014</p> <p>Q3. Processing, identification and documentation of specimens collected</p> <p>Q4. Completion of inventorisation of specimens collected in previous tour.</p> <p>Total 01 Field tour</p>

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
38.	Flora of Sonanadi Wildlife Sanctuary, Uttarakhand with ecological aspects, population status of endemics and GIS mapping of plant species Situated in the neighborhood of Corbett National Park, lies in Pauri, Uttarakhand and spreads over an area of ca. 301 sq. km <i>(New Project)</i>	Dr. R. Manikandan, Scientist C	2014 – 2017	Q1. Review of literature and consultation of available herbarium specimens for listing of species documented from the area. One Herbarium Consultation tour to NBRI during June 23 to July 4, 2014 Q2. Processing, identification and documentation of specimens collected Q3. Field Tour during October 20 to November 2, 2014. Q4. Processing, identification and documentation of specimens collected Total 01 Field tour and 01 HC Tour
39.	Flora of Nandhour Wild Life Sanctuary with ecological aspects, population status of endemics and GIS mapping <i>(Situated in Haldwani Forest Division amidst between the two districts- Nainital and Champawat. It comprises ca. 269.95 sq. km area of the Reserve forests of Haldwani and Champawat forest division in Uttarakhand)</i> <i>(New Project)</i>	Dr. K. Ambrish, Scientist C Sri Arvind Kumar Sr. Pres. Asstt.	2014 – 2017	Q1. Review of literature and consultation of available herbarium specimens for listing of species documented from the area. Q2. Field Tours during September 15 to 30, 2014. Processing, identification and documentation of collections Q3. Processing, identification and documentation of collections Q4. Field Tours from March 1 to 12, 2015. Processing, identification and documentation of Collections Total 02 Field tours
40.	Flora of Uttarakhand, Vol. IV (Aristolochiaceae; Betulaceae; Balanophoraceae; Casuarinaceae; Ceratophyllaceae; Juglandaceae; Loranthaceae; Myricaceae; Platanaceae; Proteaceae; Salicaceae) [ca. 60 spp.] <i>(New Project)</i>	Shri M. K. Singhadia, Botanist	2014 – 2015	Q1. Documentation of ca. 15 species; Q2. Documentation of ca. 15 species; Q3. Documentation of ca. 15 species. Q4. Documentation of ca. 15 species.
41.	Flora of Uttarakhand Vol. IV (Moraceae, Piperaceae, Ulmaceae, Saururaceae, Buxaceae, Daphniphyllaceae, Cannabaceae) (ca. 72 spp.) <i>(New Project)</i>	Dr. S.K. Srivastava Scientist D & Dr. Debasmita Pramanik, Bot. Ast.	2014 – 2015	Q1. Documentation of ca. 18 species; Q2. Documentation of ca. 18 species; One Herbarium consultation tour in CAL during August 15 to 30, 2014. Q3. Documentation of ca. 18 species. Q4. Documentation of ca. 18 species. Total 01 HC Tour
42.	Taxonomic revision of Tree ferns (<i>Cyathea</i> , <i>Cibotium</i> and <i>Brainea</i>) of India <i>(New Project)</i>	Dr. B. S. Kholia, Scientist C	2014 – 2017	Literature Survey and collection of type materials. One Field Tour to tree fern rich area of Andaman & Nicobar Isl. in Q4 Total 01 Field Tour

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
43.	Flora of Uttarakhand, Vol. III (Caprifoliaceae to Cuscutaceae [ca. 930 spp.]	Dr. P. K. Pusalkar, Scientist C	2011 – 2015	Final manuscript will be submitted by April 2015 after completion of documentation of remaining 240 species.
44.	Flora of Uttarakhand Vol. IV (Gesneriaceae to Martyniaceae & Plataginaceae to Phytolaccaceae) [ca. 326 spp.]	Dr. S. K. Srivastava, Scientist D, & Dr. M. R. Debta, Bot. Asstt.	2013 – 2015	Final manuscript will be submitted by April 2015 after completion of documentation of remaining 40 species.
45.	Flora of Uttarakhand Vol. IV (Acanthaceae, Verbenaceae, Urticaceae, Chenopodiaceae, Euphorbiaceae) [ca. 326 spp.]	Dr. K. Ambrish, Scientist C	2013 – 2015	ca. 190 species of Euphorbiaceae, Chenopodiaceae and one additional family Polygonaceae to be completed in 2014 – 2015
46.	Flora of Uttarakhand Vol. IV (Lamiaceae, Scrophulariaceae, Elaeagnaceae, Lauraceae, Santalaceae) [ca.325 spp.]	Dr. R. Manikandan, Scientist C	2013 – 2015	ca. 160 species of Lamiaceae and Santalaceae to be completed in 2014 – 15
47.	Flora of Kalesar National Park, Yamunanagar, Haryana with ecological aspects, population status of endemics and GIS mapping	Dr. S. K. Srivastava, Scientist D Dr. A. N. Shukla, Botanical Assistant	2013 – 2015	Q3. 01 Field Tour to Kalesar National Park during October 6 – 24, 2014. <i>Final manuscript will be submitted by April 2015 after completion of identification of specimens, preparation of taxonomic description and after completion of compilation of ecological data.</i> Total 01 Field tour
48.	Revision of the Family Bignoniaceae in India with SEM studies <i>(Out of 59 species, 14 species completed during JRF period of Sri V.K. Madhukar. 15 species of remaining 45 species completed during 2013 – 2014 and 15 species of remaining 30 species will be completed in 2014 – 15)</i>	Sri V. K. Madhukar, Botanical Assistant Dr. S. K. Srivastava, Scientist D	2013 – 2016	Q1. Herbarium consultation tour in AZRC, Jodhpur during May 4 to 10, 2014. Documentation of ca. 05 spp. Q2. Documentation of ca.05 species. Q3. Documentation of ca.05 species. Q4. Herbarium consultation tour to MH, BSI & BLAT in Q4 during February 2 to 20, 2015. Total 2 Herbarium Consultation Tours

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
49.	Revisionary and SEM studies on the genus <i>Lepisorus</i> (Sm.) Ching in India. [ca. 16 spp.]	Sri Brijesh Kumar, Botanical Asstt.	2013 – 2016	<p>Q1. Study and procurement of literature. Procurement of specimens on loan from different herbaria.</p> <p>Q2. One Herbarium Consultation Tour to CAL and BHSC during 15th -30th Aug, 2014 and one Herbarium Consultation Tour to ASSAM and ARUN during 12th - 28th Feb., 2015</p> <p>Q3. & Q4. Detailed taxonomic study of 06 species of <i>Lepisorus</i> [incl. Illustration and photo images] to be completed this year through study of herbarium specimens, compilation of synonymy and through procurement of herbaria and type images.</p> <p>Total 02 Herbarium Consultation Tours</p>
50.	<i>In vitro</i> propagation of RET species from North West Himalayas	Dr. G. S. Panwar, Scientist B & Ms L. I. Chanu, Bot. Asstt.	Ongoing	<p>Dr. Giriraj Singh Pawar ‘Sci. – B’</p> <p>Q1. One Field tour for collection of nursery seedlings of <i>Indopiptadenia oudhensis</i> from Sohelwa Wildlife Sanctuary, UP</p> <ul style="list-style-type: none"> • Selection of healthy explants and screening of plant growth regulators for callus induction and organogenesis in <i>Indopiptadenia oudhensis</i> • Multiple shoot induction in callus and other meristematic tissue of <i>Indopiptadenia oudhensis</i> • Root induction in in-vitro regenerated multiple shoots of <i>Indopiptadenia oudhensis</i> • Hardening and acclimatization of plantlets to open environment <p>Miss L.I. Chanu, Bot. Asstt.</p> <ul style="list-style-type: none"> • To emphasize in experiment in bud formation from node of moderate matured axillary shoots. • <i>In vitro</i> seed germination of <i>Pittosporum eriocarpum</i>. • To stabilize the screening of plant growth regulators to induce shooting up to the mark. • Optimization of medium condition for shoot proliferation of <i>Pittosporum eriocarpum</i>, • Nurture the shoots for proper growth and development to flourish. • To examine, standardize, the rooting hormone in well-developed shoots and hardening to achieve value added productive approach.

Sr No.	Name of the Project	Name of the executing scientists	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
51.	Ex-situ Conservation of Endemic, Threatened and Economic Plant Species in the experimental gardens of NRC and documentation of phenological data on flowering & fruiting	Dr. P.K. Pusalkar, Scientist C Dr. R. Manikandan, Scientist C Sri B. P. Kadam, Garden Overseer	Ongoing	Q1. One <i>ex-situ</i> conservation tour in Garhwal region for collection of <i>Indopiptadenia oudhensis</i> , <i>Malaxis muscifera</i> , <i>Paris polyphylla</i> , <i>Skimmia laureola</i> and <i>Tecomella undulata</i> , <i>Wigandia kunthii</i> Q2. Two <i>ex-situ</i> conservation tours in Garhwal & Kumaon regions for collection of <i>Anemone rauii</i> , <i>Athyrium anisopterum</i> , <i>Dioscorea deltoidea</i> , <i>Diplazium subsinuatatum</i> , <i>Meizotropis pellita</i> & <i>Wallichia densiflora</i> Q3. & Q4 Maintenance of the existing collections. Total 03 Ex situ conservation Tours

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	3	2	2	8
Herbarium Consultation Tour	2	2	0	1	5
Ex situ conservation Tour	1	2	0	0	3

ARID ZONE REGIONAL CENTRE, JODHPUR

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
52.	Ethnobotany of Dang District, Gujarat	Sri Vinod Maina, Scientist C Sri Ravi Prasad, Bot. Asst.	2012 – 2014 (to be extended up to September 2015)	<p>The total area of the Dang district is 1764 km² and the topographically the district is hilly terrain and whole area was not covered. 696 field numbers have been collected in previous 4 tours</p> <p>(1st. 23/8/2012 to 11/9/2012, 2nd. 8/2/2013 to 22/2/2013, 3rd. 27/6/2013 to 12/7/13 & 4th. 14/1/2014 to 30/1/2014).</p> <p>Out of these, 395 field numbers are identified and identification of remaining 301 field numbers is in progress.</p>	<p>Q1. Identification, inventorisation and documentation of ethnobotanical uses of specimens collected in previous tours. One Field Tour to the unexplored area of Dang</p> <p>Q2. Identification, inventorisation and documentation of specimens collected in previous tours. One Field Tour to the unexplored area of Dang East, South and North covering Poorna WLS. Identification, inventorisation and documentation of specimens collected. Finalisation and submission of manuscript.</p> <p>Total 02 Field Tours</p>
53.	Flora of Shoolpaneshwar Wildlife Sanctuary, Narmada, Gujarat (ca. 607 sq. km)	Dr. S. L. Meena, Scientist C Sri Hari Krishna, Bot. Asst.	2012 – 2017	<p>In Shoopanehwer WLS, so far 3 exploration tours were conducted (1st. 25/5/2012 to 15/6/2012, 2nd. 8/1/2013 to 22/1/2013 & 3rd. 26/8/2013 to 12/9/13)</p> <p>and 740 field numbers were collected. Out of these, 363 field numbers are identified.</p> <p>Remaining 377 field numbers will be identified simultaneously along with the specimens of the proposed tour.</p>	<p>Q1. Identification, inventorisation and documentation of specimens collected in previous tours. Field Tour to the unexplored area of the sanctuary during 1st week of June, 2014. Identification of specimens collected.</p> <p>Q2. Identification, inventorisation and documentation of specimens collected in previous tour. One Field Tour to the unexplored area of the sanctuary during last week of September, 2014. Identification of specimens collected.</p> <p>Q3. Identification, inventorisation and documentation of specimen collected in previous tours</p> <p>Q4. Identification, inventorisation and documentation of specimen collected in previous tours</p> <p>Total 02 Field Tours</p>

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
54.	Ex-situ conservation of endemic, threatened and economically important species of the Arid region in the Experimental Garden of AZRC and documentation of phenological data on flowering & fruiting.	Sri Vinod Maina, Scientist C	Ongoing		Q3. Recording of data on phenology of species growing in associated Botanic garden. One tour to Sirohi District (including Mount Abu) for collection of endemic plants of Rajasthan. Planning to collect 4 threatened species (<i>Dicliptera abuensis</i> , <i>Strobilanthus halbergi</i> , <i>Anogeissus sericea</i> var. <i>nummularia</i> and <i>Cordia crenata</i>) for garden introduction. Total 01 Ex situ conservation Tour

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	2	2	0	0	4
Ex situ conservation Tour	0	0	1	0	1

WESTERN REGIONAL CENTRE, PUNE

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
55.	Foliicolous Fungi of Maharashtra	Dr. Rashmi Dubey, Scientist C Mrs. A. Neelima, Preservation Asstt	November 2010 – 2016	<p>2011-2012 Desh Region (Pune Div.): Pune Dist., Sindhudurg Dist.</p> <p>2012-2013 Konkan Region (Konkan Division): Sindhudurg Dist, Thane Dist. (Konkan area), Ratnagiri Dist. (Konkan area), Raigad Dist. (Konkan area) + Mumbai Div.</p> <p>2013-2014 Vidarbha area of Maharashtra (Nagpur Div): BuldhanaDist., Amravati Dist, Nagpur Dist&Wardha Dist.</p> <p>1550 host plants were collected, identified 463 fungal species and ca 600 fungal species to be identified from previous collections.</p>	<p>Q1. Processing, Identification and description of fungal species collected in previous tours and survey conducted in the areas near Pune.</p> <p>Q2. One field tour will be undertaken during Post Monsoon season to diverse and protected areas of Nashik Wildlife Circle to collect the post monsoon foliicolous fungi. An area of 500 sq km will be covered during the tour. Places of Tour: Viz. Nandurbar, Aner dam WLS, Yaval WLS, adjoining areas of Itgatpuri Tentative Tour dates- 15.09.2014 to 30.09.2014.</p> <p>Q3. Processing (sterilization of leaves, section cutting, preparation of temporary and permanent slides, microscopic photography), Identification and description of Fungal species collected in previous tours.</p> <p>Q4. One field tour will be undertaken to unexplored areas (ca. 500 sq. km) of Kolhapur and Satara in the month of Jan. 2015 prevailing in Winter Season. Places of Tour: Forest areas of Radhanagri WLS, Koyna, Chandoli Tour Dates - From 05.1.2015 to 20.1.2015. Route – Pune →Radhanagri WLS (Via Satara, Kharad, Kohlapur →Kohlapur →Chandoli NP →Koyna WLS (via Dhedewadi, Patas). → Satara → Pune; One Herbarium Consultation tour will be undertaken to any National Fungal Herbarium (02.02.2015 to 10.02.2015) for Identification of Fungal species collected earlier from field.</p> <p>Total 02 Field tours and 01 Herbarium Consultation Tour</p>

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
56.	Studies on the Orchids of Maharashtra with ecological aspects, population status of endemics and GIS mapping	Dr. J. S. Jalal, Scientist C Sri H. C. Patil, Botanical Assistant	2012 – 2015	<p>A total 498 field specimens collected from different parts of Maharashtra has been identified, mounted and their detailed information was filled in the herbarium label.</p> <p>So far 60 species belonging to 22 genera have been recorded out of 102 known species from Maharashtra.</p> <p>Out of 60 species 24 species are endemic orchids.</p> <p>Descriptions were prepared for 50 species.</p>	<p>Q1. One field tour to explore epiphytic orchids.</p> <p><i>Area to be visited: Western parts of Pune district and some parts of Satara district. ca. 200 sq. km area will be covered</i></p> <p><i>Tentative date: 15th June to 30th June 2014.</i></p> <p><i>Pune, Ambey valley, Ambey valley, Mulsi area, Tamhini Ghat, Tamhini Ghat to Bhatghar, Bhatghar to Varandha Ghat, Dhom dam area, Dhom dam.</i></p> <p>Q2. Two field tours to explore ground orchids.</p> <p><i>I. Northern part of Maharashtra, Nashik and Nandurbar districts. Ca. 250 sq. km area will be covered.</i></p> <p><i>Tentative date: 15th July to 25th July 2014.</i></p> <p><i>Nashik, Trimbak hills & Vani hills, Saputara area, Jamoti hills, Nandurbar</i></p> <p><i>II. High altitude lateritic plateaus of southern Maharashtra and some parts of Sangli. ca. 300 sq. km area will be surveyed.</i></p> <p><i>Tentative date: 15th to 30th August, 2014.</i></p> <p><i>Kolhapur, Panhala area, Chandgad, Tilari dam area, Ramghat, Sangli district.</i></p> <p>Q3. One Herbarium Consultation tour will be undertaken. Identification of collected specimens, filling up herbarium label details in mounted sheets.</p> <p>Q4. Preparation of introductory chapter, keys, photoplates. Compilation and submission of manuscript.</p> <p>Total 03 Field tours and 01 Herb. Consultation Tour</p>

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
57.	Flora of Biligiriranga swamy Temple Wildlife Sanctuary, Karnataka with ecological aspects, population status of endemics and GIS mapping (ca. 539 sq. km)	Dr. (Ms.) J. Jayanthi, Scientist C	2013 – 2017	2 Field tours collected a total of 443 field nos. identified 367 field nos. of which 141 up to species level and 226 up to genus level.	<p>Q1. Field tour to be undertaken to the unexplored areas (Kollegal range, Punajanur range, K. Gudi range, Bailur range and Yelandur range of the sanctuary to study and collect pre-monsoon flora during May 28 to June 10, 2014</p> <p>Q2. Identification of species collected during the tours and preparation of manuscript of 50 identified species.</p> <p>Q3. Field tour to be undertaken during November 01 – 15, 2014 to Kollegal range, K. Gudi range, Punajanur range, Bailur range and Yelandur range of the sanctuary to explore the post monsoon herbaceous flora of the sanctuary. Identification of plants collected.</p> <p>Q4. Field tour to be undertaken during February 20 to March 05, 2015 to explore the arborescent flora of the Kollegal range, K. Gudi range, Punajanur range, Bailur range and Yelandur range; (30 sq. km) of the sanctuary.</p> <p>Total 03 Field tours</p>
58.	Ferns of Karnataka (<i>New Project</i>)	Dr. A. Benniamin, Scientist C	2014 – 2018		<p>Q1. One Herbarium consultation tour to Blatter Herbarium, Mumbai and study earlier collections during May, 12 – 16, 2014</p> <p>Q2. One herbarium consultation tour to IIS, Bangalore, during September 15 – 19, 2014.</p> <p>Q3. One field tour to different localities of Chickmagalur forest covering 400 sq. km during Oct. 20 – 31, 2014. Survey area: Chickmagalur ; Kudremukh National Park.</p> <p>Q4. Processing, studying and identification of specimen collected.</p> <p>Total 01 Field tour and 02 Herb. Con Tours</p>

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
59.	Flora of Sharavathi valley Wildlife Sanctuary, Shimoga, Karnataka (ca. 431 sq. km)	Dr. S. K. Das Das, Botanist	2012 – 2015		<p>Q1. Processing and Identification of plant specimens collected during earlier field tours.</p> <p>Q2. Processing and Identification of plant specimens collected during earlier field tours.</p> <p>Q3. One field tour to unexplored areas of the sanctuary during October 7 – 22, 2014.</p> <p>Q4. One Herbarium consultation tour to CNH, Howrah (February 7 to 22, 2015) & consultation with experts to identify the rest of the critical specimens & Library consultation. Preparation of check list of the plant species documented from the sanctuary area. Submission of Final Report.</p> <p>Total 01 Field tour and 01 HC Tour</p>
60.	<i>Ex – situ</i> Conservation of EET plants of the region with focus on endemic trees of W. Ghats in the experimental gardens of WRC.	Dr. (Ms.) J. Jayanthi, Scientist C R.K. Vishnoi Garden Overseer	Ongoing		Selected species to be collected from Western Ghats during the regular field tours for introduction in the Experimental garden. Documentation of data on phenology of species growing in the botanic garden.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	2	3	3	2	10
Herbarium Consultation Tour	1	1	1	2	5

DECCAN REGIONAL CENTRE, HYDERABAD

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Remarks	Quantifiable deliverables (targets) for 2014 – 2015
61.	Flora of Seshachalam Biosphere Reserve, Andhra Pradesh (ca. 4755 sq.km)	Dr. P.V.Prasanna, Scientist E & Sri M. Sankara Rao, Preservation Asstt., Gade I	2012 – 2017	<ul style="list-style-type: none"> • No. of Field Tours: 07 • No. of Herbarium Tours: 02 • Field nos. collected: 729 • Field nos. identified: 729 • No. of species identified: 198 • Description completed: 198 	Dr. Prasanna has conducted 2 additional field trips during 2013-14 as he could not complete field work in the regular proposed trips due to political disturbances.	<p>While continuing the identification and documentation of plant species collected during the previous field tours, four field tours during 2014 – 2015.</p> <p>Q1. One field tour (15.05.2014 to 25.05.2014) to Kadapa-Vempalli range and identification and documentation of specimens collected in tour.</p> <p>Q2. One field tour (15.09.2014 to 27.09.2014) to Kadapa-Vempalli range Identification & documentation of specimens collected in tour.</p> <p>Q3. One field tour (15.10.2014 to 27.10.2014) to Kadapa-Vempalli range Identification & documentation of specimens collected in tour.</p> <p>Q4. One field tour (15.02.2015 to 28.02.2015) to Rajampeta-Kodur range. Identification & documentation of specimens collected in tour.</p> <p>ca. 150 sq. km will be covered and 100 species will be completed.</p> <p>Total 04 Field tours</p>

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Work Done So Far	Quantifiable deliverables (targets) for 2014 – 2015
62.	Flora of Nagarjunasagar Srisailam Wildlife Sanctuary (Tiger Reserve), Andhra Pradesh with population status of endemic and threatened taxa and GIS mapping (ca 3568 sq. km)	Dr. L. Rasingam, Scientist B & Sri M. Sankara Rao, Preservation Asstt., Grade I	2012 – 2017	<ul style="list-style-type: none"> No. of Field Tours: 04 No. of Herbarium Tours: 01 Field nos. collected: 713 Field nos. identified: 536 No. of species identified: 134 Description completed: 134 	<p>Q1. Identification and documentation of specimens collected in previous tours.</p> <p>Q2. One field tour (16.08.2014 to 27.08.2014) to NSTR for plant survey and collection.</p> <p>Q3. One field tour (14.11.2014 to 24.11.2014) to NSTR for plant survey and collection.</p> <p>Q4. One herbarium consultation tour (23.02.2015 to 02.03.2015) to S.K. University, Anantapur and identification and documentation of specimens collected in previous tours.</p> <p>ca. 400 km² areas will be covered in 2 field tours.</p> <p>Total 02 Field tours and 01 HC Tour</p>
63.	Flora of 650 Sacred Groves of Andhra Pradesh	Dr. M. Ahmedullah, Scientist D Sri M. Sankara Rao, Pres.Asstt.I	2012 – 2017	<ul style="list-style-type: none"> No. of Field Tours: 10 No. of Herbarium Tours: 0 Field nos. collected: 127 Field nos. identified: 18 No. of species identified: 18 	<p>Q1. Vizianagaram Dist. (5.04.2014 to 10.04.14) (covering 3 prioritised sacred groves/ sites)</p> <p>Q2. Visakhapatnam Dist.(9.07.14 to 15.7.2014) (covering 3 prioritised sacred groves/ sites)</p> <p>Q3. East Godavari Dist.(23.12.14 to 28.12.14) (covering 3 prioritised sacred groves/ sites)</p> <p>Q4. West Godavari Dist.(6.1.15 to 11.1.2015) (covering 3 prioritised sacred groves/ sites)</p> <p>12 sacred grove sites within above mentioned 04 districts would be covered in 2014 – 2015.</p> <p>Total 04 Field tours</p>

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	2	3	3	2	10
Herbarium Consultation Tour	0	0	0	1	1

SOUTHERN REGIONAL CENTRE, COIMBATORE

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
64.	Seaweed flora of Karnataka Coast with ecological aspects. (New Project)	Dr. M. Palanisamy, Scientist C Mr. S. K. Yadav, Bot. Asstt	2014 – 2017	Q1. & Q2. Literature Survey and collection of type materials Q3. One field tour in October, 2014 for 15 days Mangalore to Polem Beach of Dakshin Kannada District; Udupi District & Uttara Kannada District ca. 320 kms; Collection and identification of specimens Q4. One Herbarium consultation tour for 10 days to NIO, Goa Total 01 Field Tour and 01 HC Tour
65.	Pollen and Seed morphology of Genus <i>Andrographis</i> Wall. ex Nees using SEM	Shri. G. Gnanasekaran, Botanical Assistant	2012 – 2017	10 species of <i>Andrographis</i> to be studied
66.	Seed morphology of <i>Ficus</i> L. using SEM	Sri J. V. Sudhakar, Botanical Assistant	2012 – 2017	20 species will be studied with SEM Tour: Plant Exploration cum Herbarium Consultation to Shillong and Itanagar in Q4 (1 st week of March 2015). Total 01 Field Tour and 01 HC Tour
67.	Study of Caryopsis in <i>Eragrostis Sporobolus</i> and <i>Tripogon</i> genera of Poaceae using SEM	Dr. K. A. A. Kabeer, Scientist C	2012 – 2017	<i>Sporobolus</i> R.Br: 10 species. <i>Tripogon</i> Roem. & Schult: 5 species. (A total of 15 species)
68.	Study of Pollinia of South Indian Orchids using SEM	Dr. G. V. S. Murthy, Scientist F	2012 – 2017	20 species to be studied
69.	Flora of Malabar Wildlife Sanctuary, Kozikode, Kerala (ca. 74.22 sq. km)	Dr. J. H. Franklin Benjamin Scientist B	2012 – 2015	While continuing the identification and documentation of plant species collected during the previous field tours, two field tours during Q1 (2 nd week of July 2014) and during Q3 (1 st Week of Nov., 2014). Total 02 Field Tours
70.	Flora of Srivilliputhur Wildlife Sanctuary, Tamil Nadu (ca. 485 sq. km)	Dr. K. A. A. Kabeer, Scientist C; Dr. G.Gnanasekaran, Bot. Asstt.	2011 – 2015	While continuing the identification and documentation of plant species collected during the previous field tours, three field tours during 2014 – 2015. Q1. One field tour in 1 st week of June 2014 and identification and documentation of specimens collected in tour. Q2. One field tour in 1 st week of September 2014 and identification and documentation of specimens collected in tour. Q3. One field tour in 1 st week of December 2014 and identification and documentation of specimens collected in tour. Q4. Complete the descriptions and keys of all taxa and manuscript submission as per the Flora format. Total 03 Field Tours
71.	Flora of Kerala Volume 7 (Part 1) Cyperaceae (18 genera and 230 taxa)	Dr. K. A. A. Kabeer, Scientist C, Dr. J.H. Benjamin, Scientist B,	2013 – 2015	To complete the descriptions of all taxa and submission of manuscript. One Herbarium consultation tour to TBGRI, KFRI and Calicut during Q2 in July 2014. Total 01 HC Tour

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
72.	<ul style="list-style-type: none"> • Karaivetti Wildlife Sanctuary, Perambalur District (ca. 4.54 sq. km) • Vaduvur Wildlife Sanctuary, Tiruvarur District (ca. 1.28 sq. km) • Udayamarthandapuram Wildlife Sanctuary, Tiruvarur District (ca. 0.5 sq. km) • Point Calimere Wildlife Sanctuary, Nagapattinam District (ca. 17.26 sq. km) with population status of endemics and GIS mapping 	<p>Dr. G.V.S Murthy, Scientist F</p> <p>Dr. Kaliamoorthy, Scientist C</p> <p>Sri K. Y. Konduru Pres. Asst.</p>	2013 – 2015	<p>Q1. One field tour to following places during 2nd Week of May 2014. Vadavur Udyamarthandapuram</p> <p>Q2. Identification and documentation of specimens collected in tour.</p> <p>Q3. One field tour to following places during 3rd Week of Nov., 2014 Karaivetti Point Calimere</p> <p>Q4. Complete the descriptions of all taxa and manuscript submission as per the Flora format.</p> <p>Total 02 Field Tours</p>
73.	Ex situ conservation of Endemic, Endangered and Threatened plants of the region and documentation of phenology of species in garden.	Dr. Kaliamoorthy, Scientist C	Ongoing	<p>Two <i>Ex-situ</i> conservation tours to Agasthyamalai Hill ranges in Q2 (4th week of August, 2014) and Q4 (1st Week of January, 2015) for RET plant collection. Documentation of phenological data</p> <p>Total 02 Ex-situ conservation Tours</p>

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	3	1	4	1	9
Herbarium Consultation Tour	0	1	0	2	3
Ex situ conservation Tour	0	1	0	1	2

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
74.	Lichens of Nicobar Islands (<i>New Project</i>)	Dr. T.A.M. Jagadeesh Ram, Scientist C	2014 – 2017	Q1. Field tour to Great Nicobar and Little Nicobar group of Islands from 21.04.2014 to 10.05.2014 for collection of lichen samples. Q2. Field tour to Car Nicobar Island from 21.09.2014 to 26.09.2014 for collection of lichen samples. Q3. Field tour to Nancowry group of Islands (Nancowry, Katchal, Kamorta, Trinkat, etc.) from 17.11.2014 to 30.12.2014 for collection of lichen samples. Q4. Processing, identification & documentation of samples. Total 03 Field Tours
75.	Flora of Trinket Island, Central Nicobar (ca. 29 sq.km.) with ecological aspects, population status of endemics and GIS mapping (<i>New Project</i>)	Dr. M.Y. Kamble, Scientist-C	2014 – 2015	Q1. Study of literature and examination of specimens collected earlier from the Nicobar Islands. Q2. One field tour (16-08-2014 to 30-08-2014) to Trinket Island for survey and collection. Q3. Processing, identification and documentation of samples. One field tour (01-12-2014 to 15-12-2014) to Trinket Island for Survey and collection. Q4. Identification of specimens. Finalization of manuscript Total 02 Field Tours
76.	Flora of Rani Jhansi Marine National Park (ca. 256 sq. km)	Dr. C. Murugan, Scientist C	2011 – 2015	Q1. Identification and inventorization of earlier collections. Q2. Field tour to cover ca. 50 sq. km. (21.09.2014 to 30.09.2014) at John Lawrence Is., Henry Lawrence Is., Outrum Is., S. Button Is., Middle Button Is., N. Button Is., Ingilis Is. Identification/inventorying of collections Q3. Identification and inventorying of earlier collections. One HCT to CAL during 09.11.2014 to 22.11.2014 Q4. Field tour to cover ca. 50 sq. km. (02-02-2015 to 11-02-2015) at John Lawrence Is., Henry Lawrence Is., Outrum Is., South Button Is., Middle Button Is., North Button Is., Ingilis Is. Identification and inventorying of earlier collections. Compilation & submission of report Total 02 Field Tours and 01 HC Tour
77.	Collection & Introduction of seeds and seedlings of 20 tree species, Zingibers and Rattans in the Dhanikhari Exp. Garden cum Arboretum to raise nursery and work on seed germination. (<i>New Project</i>)	Dr. Lal Ji Singh, Scientist C	Ongoing 2014-17	Q1. One tour to be undertaken for collection of seeds and seedlings of tree species, zingibers and rattans for 7 days (23.06.2014 to 30.06.2014) at North Andaman. Q2. Herbarium and library consultation tours to be undertaken for during July 07 – 18, 2014 at CAL Q3. One tour to be undertaken for collection of seeds and seedlings of tree species, zingibers from Middle Andaman <i>w.e.f.</i> 20.10.2014 to 27.10.2014 Q4. One tour to be undertaken for collection of seeds and seedlings of tree species, zingibers at Little Andaman <i>w.e.f.</i> 19.02.2015 to 26.02.2015. Total 03 Ex Situ Conservation Tours and 01 HC Tour
78.	Recording of Phenology: Dhanikari Garden	Dr. Lal Ji Singh, Scientist C	Ongoing	To document flowering and fruiting period of selected tree species which are established at the Dhanikari Experimental Garden-cum-Arboretum.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	3	2	1	7
Herbarium Consultation Tour	0	1	1	0	2
Ex-situ Conservation Tours	1	0	1	1	3

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
79.	Collection, Introduction & <i>Ex-situ</i> Conservation of Rare and Endemic Orchids of NE India (New Project)	Dr. Md. U. Sharief, Scientist D Dr. Basant Kr. Singh Sr. Pres. Asstt.	2014 – 2017	Two field tours to Tripura and NE India in Q2 and in Q4 respectively for 10 rare & endemic orchids in each tour. Total 02 Ex-situ conservation Tours
80.	Survey and Assessment of growing stock of economic bamboos of West Bengal (New Project)	Dr. Pushpakumari, Scientist C In collaboration with West Bengal State Council of Science & Technology	2014 – 2017	Q1. & Q3. Field tour to bamboo rich areas of 24 Pgs (N) and Midnapore districts to make an assessment of the growing and available stalks. Q2. & Q4. Field tour to bamboo rich areas of Hooghly, Burdwan and Bankura districts to make an assessment of the growing and available stalks. Total 04 Field Tours
81.	Taxonomic Revision of <i>Bambusoideae</i> (<i>Poaceae</i>) in India (New Project)	Dr. Pushpakumari, Scientist C	2014 – 2017	Two Herbarium study tours will be taken in first year in Quarter 1 and in Quarter 3 to BSHC, ASSAM, ARUN and BSI, AMH, MH
82.	Herbaceous Flora (Dicots) of AJCBIBG (New Project)	Dr. B. K. Singh, Pres. Asstt. I	2014 – 2016	Documentation of Dicot Herbaceous Flora of AJCBIBG
83.	GIS phyto-mapping & digitization of shrubs and trees in AJC Bose Indian Botanic Garden (New Project)	Dr. C. M. Sabhapathy Asstt. Information officer Dr. A. Pramanik Scientist D	2014 – 2016	<ul style="list-style-type: none"> Gathering Information about the introduction of the Tree and Shrubs in the past and present from the researchers of BSI and from the Literatures/ Catalogues as per availability. Locating the Trees and Shrubs in the Garden. Collection of fresh Flowering, Fruiting specimens and Identifying. Making Digital Plates of all the Significant/ Identifying Characters (as per necessity)
84.	Indigenous Palms of India	Dr. S. S. Hameed, Scientist C	2012 – 2015	Two tours in Q3 and in Q4 to NE India and North India respectively for collection of <i>ca.</i> 15 species of palms Total 02 Ex-situ conservation Tours
85.	<i>Ex situ</i> Conservation of Bamboos of India	Dr. Pushpa Kumari, Scientist C	2012 – 2017	Two field tours in Q1 and in Q3 to North East region and southern region for <ul style="list-style-type: none"> Report of flowering in Bamboo species Survival status of introduced species in prev. years Introduction of <i>ca.</i> 10 spp. of bamboo in the garden. Total 02 Ex-situ conservation Tours
86.	Development of Division No. 25 of AJC Bose IBG.	Dr. A. Pramanik, Scientist D Dr.H.S. Mahapatra, Scientist C	2012 – 2017	One tour to North East India in Q3 for collection of Cinchona, Ipecac and Citrus. Total 01 Ex-situ conservation Tours
87.	Collection, introduction and multiplication of 20 endemic, threatened, medicinal, ornamental and economically important plants	Dr. A. Pramanik, Scientist D Dr. B. K. Singh, Pres. Asstt. I	2012 – 2017	20 endemic, economic & threatened species out of 50 EET species to be collected in two tours in North East India to be taken up in Q1 and Q3 by Dr. A. Pramanik & Dr. B. K. Singh. Total 02 Ex-situ conservation Tours

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	1	1	1	4
Herbarium Consultation Tour	1	0	1	0	2
<i>Ex-situ</i> Conservation Tour	2	1	4	2	9

CENTRAL NATIONAL HERBARIUM, HOWRAH

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
88.	Flora of Buxa Wildlife Sanctuary, Jalpaiguri, WB. with GIS mapping (ca. 252 sq. km)	Sri Anant Kumar, Sr. Pres. Asstt. (Hq.); Dr. P. Venu, Scientist F (Deployed at DRC)	2011 – 2015	Total 01 Field Tour in Q1 to the area to cover the remaining unexplored areas & finalization and submission of manuscript
89.	Flora of Jaldapara Wildlife Sanctuary, West Bengal with GIS mapping of species (ca. 216 sq. km)	Dr. K. Karthigeyan, Scientist C	2012 – 2015	Total 02 Field Tours in Q1 & Q3 to the area to cover the remaining unexplored areas & finalization and submission of manuscript
90.	Verification of deposition of types at different herbaria of BSI based on names of new taxa published during 1990-2004 in some selected journals	Dr. Subir Bandyopadhyay, Botanist. Sri Gopal Krishna, Preservation Assistant	2013 – 2015	Searching of new taxa published in Current Science and Nordic Journal of Botany published during the period 1990-2004. Searching of remaining types at CAL and preparation of manuscript
91.	Editing & Updating of mss. of Flora of West Bengal, Vol. V (Monocot) <i>Hydrocharitaceae – Poaceae</i> (37 families)	Dr. V.P. Prasad, Scientist C	2012 – 2015	Editing and updating of the mss. of following families under Flora of West Bengal, Vol. V (Monocot) will be done by Dr. V.P. Prasad: <i>Burmanniaceae, Agavaceae, Hypoxidaceae, Taccaceae, Pontederiaceae, Xyridaceae, Commelinaceae, Juncaceae, Flagellariaceae, Typhaceae, Pandanaceae, Lemnaceae, Ericaulaceae, Cyperaceae, Bromeliaceae, Musaceae, Cannaceae, Haemodoraceae, Smilacaceae, Dioscoreaceae</i> Editing and updating of the mss. of following families under Flora of West Bengal, Vol. V (Monocot) will be done by Dr. V. Sampath Kumar: <i>Hydrocharitaceae, Araceae, Alismataceae, Butomaceae, Najadaceae, Costaceae, Aponogetonaceae, Liliaceae, Potamogetonaceae, Zannichelliaceae, Iridaceae, Zingiberaceae, Arecaceae, Amaryllidaceae</i> Editing and updating of the mss. of following families under Flora of West Bengal, Vol. V (Monocot) will be done by Dr. P. Lakshminarasimhan: <i>Poaceae</i>
92.	Flora of Gautam Buddha Wildlife Sanctuary, Bihar & Jharkhand with GIS mapping of species (ca. 259 sq. km)	Sri Anand Kumar, Bot. Asstt. (Hqrs.); Dr. P. Venu, Scientist F (Deployed at DRC)	2012 – 2016	Total 02 Field Tours to the area to cover ca. 50 sq. km each in Q1 & Q3. Inventorying 100 species

Sr No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
93.	Flora of Vikramshila Gangetic Dolphin Wildlife Sanctuary, Bhagalpur, Bihar with GIS mapping of species (ca. 60 sq.km segment of Ganges)	Dr. O. N. Maurya Scientist-‘B’	2013 – 2016	Q1. Completion of inventorisation of specimens collected in previous tour. Field tour to the sanctuary for collection of plants. Q2. Processing, identification and documentation of collections Q3. Completion of inventorisation of specimens collected in previous tour. Field tour to the sanctuary for collection of plants. Q4. Completion of inventorisation of collections of previous tours. Total 02 Field Tours
94.	Revision of the genus <i>Fimbristylis</i> of family Cyperaceae under Flora of India. (ca. 120 spp. and 12 infraspecific taxa)	Dr. V. P. Prasad, Scientist C	2013 – 2016	<ul style="list-style-type: none"> Field tour in Q2 is proposed to Nilgiris and part of Southern Western Ghats (with Mr. Animesh Manji, JRF,) for collecting high altitude species of <i>Fimbristylis</i> and other genera of Cyperaceae Herb. Consultation Tours in Q3 is proposed to BLAT; AHMA, Pune and BSI Pune to check the identity and collect the label data of all the available specimens of <i>Fimbristylis</i> and other genera like <i>Cyperus</i>. To prepare mss. of 25 species Total 01 Field Tour & 1 HC Tour
95.	Flora of Bihar, Volume – I [Introduction, Key to Families, Ranunculaceae – Mimosaceae (ca. 728 species, 62 families)]	<ul style="list-style-type: none"> Dr. Vinay Ranjan, Scientist C Dr. K. Karthigeyan, Scientist C Dr. O. N. Maurya, Scientist B 	2012 – 2015	Two field tours are proposed in Q2 & Q3 for making collections and photographing of plant species and general views from unexplored districts of Bihar for Flora of Bihar Dr. W. Arisdason, Mimosaceae (ca. 39spp.) Dr. O. N. Maurya Elaeocarpaceae, Linaceae, Erythroxylaceae, Malpighiaceae (ca. 13 spp.) Dr. Vinay Ranjan, Tribe Trifolieae, (ca. 12 spp.) Tribe Aeschynomeneae (ca. 08 spp.) Tribe Crotalariaeae Tribe Phaseoleae (subtribe- Clitorinae, Phaseolinae, Cajaninae) (ca. 70 spp.) Dr. K. Karthigeyan Tribe Psoraleae, Galegeae, Cicereae, Viciae (ca. 12 spp.)
96.	Flora of Jharkhand, Volume I [Introduction, Key to the Families, Ranunculaceae – Mimosaceae (ca. 728 species, 62 families)]	<ul style="list-style-type: none"> Dr. W. Arisdason, Scientist B Sri P. P. Ghoshal, Botanist Sri K. L. Maity, Curator, CNH Dr. T.K. Paul, Botanist Sri C.R. Magesh, Preserv. Asstt. Smt. Mahua Pal, Bot. Asstt. Sri Anand Kumar, Bot. Asstt. (Hq.) Sri Anant Kr., Preser. Asstt. (Hq.) Sri C.R. Magesh, Preser. Asstt. Gr. I Sri Gopal Krishna, Pres.. Asstt. Gr. I Sri Shyam Biswa, Pres.. Asstt. Gr. I Sri V.K. Mastakar, Pres.. Asstt. Gr. I 		

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	4	2	4	0	10
Herbarium Consultation Tour	0	0	1	0	1

CENTRAL BOTANICAL LABORATORY, HOWRAH

Sr. No	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 15		
97.	<p>Ethnobotanical Study of Odisha, Phase – II</p> <ul style="list-style-type: none"> ➤ Bargarh, Balangir, ➤ Nabrangpur, Dhenkanal, Naupada[#], Malkangiri[#], ➤ Koraput* (tribal population 5, 85,830 & area 8,534 sq.km), ➤ Deogarh* (tribal population 92,103 & area 2781 sq.km), ➤ Jajapur (tribal population 1, 25,989 & area 2885 sq.km) ➤ Ganjam (tribal population 90,919 & area 8,033 sq.km) <p># will be kept pending due to disturbed situation. Jajapur district and Ganjam district are included in their place. * Newly included districts</p>	<ol style="list-style-type: none"> 1. Dr. Harish Singh, Scientist 'C' 2. Smt. Sujana, K.A. Scientist 'C' 3. Sri A.C. Halder, Botanist, Hqrs., 4. Sri P. K. Baske, Botanist, CNH, 5. Sri Saravanan, Bot. Asstt., 6. Smt. Monika Mishra, Bot. Asstt., 7. Sri N. R. Siddabathula, Bot. Asstt., 8. Sri Dhole Pankaj Arvind, Bot. Asstt. 9. Sri P. A. Diwakar, Sr. Pres. Asstt. 	2012 – 2017 (For Koraput, Jajpur, Deogarh and Ganjam the tenure is 2013 – 15)	<p>Q1. Literature survey, completion of identification, inventorisation, and documentation of specimens collected earlier. One Field Tour to Jaipur from 11th to 24th May, 2014</p> <p>Q2. Completion of identification, inventorisation, and documentation of specimens collected earlier. One Field Tour to Deogarh from 11th to 25th August, 2014</p> <p>Q3. Completion of identification, inventorisation, and documentation of specimens collected earlier. One Field tour to Ganjam from 10th to 24th November, 2014</p> <p>Q4. Completion of identification, inventorisation, and documentation of specimens collected earlier. One Field tour to Koraput from 5th to 22nd January 2015</p> <p>Total 4 Ethnobotanical Field Tours</p>		
98.	Flora and Ethnobotany of Balasore district, Odisha (ca. 3706 sq. km)	Smt. Sujana K. A., Scientist-'C' , R. Saravanan, Bot. Asstt., Smt. Monika Mishra, Bot. Asstt. & Pandey Amit Diwakar, Pres. Asstt-I	2013 – 2016	<p>1st Quarter Completion of identification, inventorisation and documentation of specimens collected earlier. One field tour to Balasore (area ca.620 sq. km) Tentative date of tour: April 21– May 03, 2014</p> <p>2nd Quarter Processing, identification and documentation of collected specimens collected earlier.</p> <p>3rd Quarter Completion of identification, inventorisation, and documentation of specimens collected earlier. One field tour to Balasore (area ca. 620 sq. km) Tentative date: December 08-20, 2014</p> <p>4th Quarter Processing, identification and documentation of specimens collected earlier.</p> <p>Total 2 Ethnobotanical Field Tours</p>		
Nature of Tour		Q1	Q2	Q3	Q4	Total
Field Tour		2	1	2	1	6

INDUSTRIAL SECTION, INDIAN MUSEUM, KOLKATA

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
99.	Collection of economic plant materials for enrichment and replacement of exhibits of the Botanical gallery	Dr. A.K. Sahoo, Scientist C	Ongoing	One tour in Q2 for collection of Plant materials in tribal localities of Giridih district of Jharkhand.
100.	Procurement (or exchange) of seasonal plant materials from other Museum	Dr. A.K. Sahoo, Scientist C	Ongoing	One tour in Q3 to NBPGR (ICAR) New Delhi to collect selected species of seasonal plant materials.
101.	Collection of Oil Crops, Pulse & Medicinal Plant materials for enrichment of Botanical Gallery	Mr Arumugum S., Botanical Asstt. Mr B.C.Dey, Sr. Pres. Asstt. Sri D. L. Shirodgar, Asstt. Curator ISIM Sri S.K.Sharma, Sr. Pres. Asstt.	Ongoing	a. One tour in Q1 for Plant collection material from Shillong and surrounding areas. b. Another tour in Q3 for Plant collection material from Pune, Nasik and surrounding areas (Maharashtra).
102.	Listing and identification of Dicot herbarium specimens at BSIS.	Mrs. Geeta Chaudhury, Botanist Mr B.C. Dey, Sr. Pres. Asstt. Mr. S. K. Sharma, Sr. Pres. Asstt.	2013 – 2016	ca. 6000 specimens to be documented
103.	Listing and identification of Monocot herbarium specimens at BSIS.	Mr D.L. Shirodgar Asstt. Curator ISIM Mr Arumugum S., Botanical Asstt	2013 – 2016	ca. 4000 specimens to be documented
104.	Revision of Family Gesneriaceae of North East India	Dr. B.K. Sinha, Scientist E Ms. Sudeshna Dutta, Preserv. Asstt., Gr.-I.	2013 – 2015	<ul style="list-style-type: none"> Documentation of 48 species (12 species in each Quarter) to be completed One Herbarium consultation tour to ASSAM Herbarium in Q1.
105.	Identification & listing of the specimens of the family Poaceae at BSIS. <i>(New Project)</i>	Mr Arumugum S., Botanical Asstt	2014 – 2016	Preparation of list of herbarium specimens available at BSIS. Identification of 15 specimens to be completed in each quarter. Nomenclature of specimens to be updated.
106.	Interpretation of Family Euphorbiaceae in ICONES Roxburghianae <i>(New Project)</i>	Dr T. Chakraborty Scientist D	2014 to December, 2014	There are 87 entries in Euphorbiaceae family which will be interpreted.
107.	Interpretation of Family Asteraceae in ICONES Roxburghianae <i>(New Project)</i>	Dr B.K. Sinha, Sci. E Mr D.L. Shirodgar Asstt. Curator ISIM	2014 – 2015	56 entries in family Asteraceae in Icones Roburghianae will be interpreted.
108.	Listing of Burkil collections at BSIS <i>(New Project)</i>	Dr A.K. Sahoo, Sci C Mr B.C. Dey	2014 – 2015	Listing of Burkil Collection available at BSIS (ca.1000 sheets)

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	1	2	0	4
Herbarium Consultation Tour	1	0	0	0	1

CRYPTOGAMY

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
109.	Studies on wild mushrooms of east and south Sikkim (except Agaricaceae, Hygrophoraceae, Boletaceae, Suillaceae and Cantharellaceae) (<i>New Project</i>)	Dr. Kanad Das, Scientist C	2014 (July) – 2019	Q2. Review of literature and consultation of herbarium specimens documented from the area. One field tour to Pangolakha WLS (128 km ²), Kyongnosla alpine sanctuary (31 km ²), forest areas surrounding Memenchu and Kupup lake during July-August. Q3. Processing, SEM Studies at CNH, identification and documentation of collected wild mushrooms. Q4. Finalisation and submission of manuscript.
110.	Revision of family <i>Metzgeriaceae</i> in India (ca. 26 spp.) and data-basing liverworts and hornworts specimens in CAL (<i>New Project</i>)	Dr. D. Singh, Scientist C	2015 (January) to 2018 (March)	Q4. Studies on specimens of genera <i>Metzgeria</i> and <i>Apometzgeria</i> available in CAL
111.	Studies on Wild Mushrooms of North Sikkim	Dr. Kanad Das, Scientist C	2011 – 2014 (September)	One field tour from Linza to Tolung of Upper Dzongu Block covering subtropical to temperate and subalpine forested areas of North district (150 km ²) during July-August, 2014 in Q2. Processing, SEM studies, identification and documentation of wild mushrooms collected. Finalisation and submission of manuscript
112.	Liverworts & Hornworts of Sikkim (excl. East dist.)	Dr. D.K. Singh, Scientist F Dr. D. Singh, Scientist C	2011 – 2014 (October)	Q1 & Q2. SEM studies on spores of 50 species and study of type/authentic specimens received/to be received on loan from foreign herbaria. Q3. Finalisation and submission of manuscript.
113.	Algal Flora of Jharkhand	Dr. R. K. Gupta, Scientist C	2012 – 2017	Q1. Processing, identification and documentation of the samples collected earlier. Q2. Tour to Kodema WLS, Gautam Budha WLS, Tilaiya Dam, Local water bodies nr. mica mines, and Giridih (Parasnath WLS, Sita Kund, local water bodies) covering ca. 750 sq. km for collections. Q3. Tour to Seraikela Kharsawa (Dalma WLS, Local water bodies near uranium mines,) and East Singhbhum (Dalma WLS, local water bodies,) covering 1200 sq. km for collections. Q4. Tour to Khunti (Dasun Fall, Torpa River, Local water bodies,) and Hazaribagh (Hazaribagh WLS, Gautam WLS, Tilaya Dam, Local water bodies) covering an area of 900 sq. km for collections. Processing, identification and documentation of the samples collected
114.	Wood- rotting fungi of Rajmahal hills Jharkhand	Sri Manoj Emanuel Hembrom Botanist CNH	2013 – 2017	Processing, identification and documentation of the samples collected. Field tour in Q1 to Rajmahal hills, Pakur (Pakuria, Amrapara, Litipara, Hiranpur block) and Godda (Sundarpahari & Boarigor block) ca. 400 sq. km

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	3	1	1	6

PHARMACOGNOSY

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Quantifiable deliverables (targets) for 2014 – 2015
115.	Pharmacognostic studies on medicinal Aconites of India	Dr. A. B. D. Selvam, Scientist C	2010 – 2015	<p>1st field tour in Q2 to Jammu & Kashmir and Himachal Pradesh) from 30.08.14 to 22.09.14.</p> <p>2nd field tour in Q3 to Darjeeling district of West Bengal & Tawang District of Arunachal Pradesh) from 27.09.14 to 15.10.14.</p> <p>Herbarium Consultation cum Crude Drug consultation tour in Q3 to NBRI, Lucknow from 01.11.14 to 8.11.14</p> <p>Finalisation and submission of manuscript</p>

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	0	1	1	0	2
Herbarium Consultation Tour	0	0	1	0	1

ECOLOGY

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Proposed Quantifiable deliverables (targets) for 2014 – 2015
116.	Epiphytic Algal Flora of AJC Bose IBG, Howrah	Dr. Pratibha Gupta Scientist D	2013 – 2017	Sampling of palms in large palm house, in different seasons, will be completed

PLANT CHEMISTRY

Sr No.	Name of the Project	Name of the executing scientist	Tenure	Proposed Quantifiable deliverables (targets) for 2014 – 2015
117.	Chemical composition and nutritive value of Wild Edible Plants of NE Region	Dr. Tapan Seal, Scientist B	2008 – 2016	One field tour to Meghalaya in Q3 and another to field tour to Arunachal Pradesh in Q4 to collect selected plants to study chemical composition and nutritive value of 20 samples.

Nature of Tour	Q1	Q2	Q3	Q4	Total
Field Tour	1	0	1	0	2

BREAKUP OF TOURS

Regional Centre	Annual Target for 2014 – 15												Total
	Field tours				Herb. Consultation Tours				Ex-situ conservation tours				
	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	
1. APRC	2	3	4	0	2	0	1	2	0	0	0	0	14
2. ERC	2	4	6	2	1	0	0	3	1	1	0	0	20
3. SHRC	2	4	2	0	0	0	1	1	0	0	0	0	10
4. CRC	1	2	1	1	0	0	0	2	0	0	0	0	7
5. BGIR	0	0	0	0	0	0	0	0	1	0	1	0	2
6. NRC	1	3	2	2	2	2	0	1	1	2	0	0	16
7. AZRC	2	2	0	0	0	0	0	0	0	0	1	0	5
8. WRC	2	3	3	2	1	1	1	2	0	0	0	0	15
9. DRC	2	3	3	2	0	0	0	1	0	0	0	0	11
10. SRC	3	1	4	1	0	1	0	2	0	1	0	1	14
11. ANRC	1	3	2	1	0	1	1	0	1	0	1	1	12
12. AJCBIBG	1	1	1	1	1	0	1	0	2	1	4	2	15
13. CNH	4	2	4	0	0	0	1	0	0	0	0	0	11
14. CBL	2	1	2	1	0	0	0	0	0	0	0	0	6
15. ISIM	1	1	2	0	1	0	0	0	0	0	0	0	5
16. CRYPTO	1	3	1	1	0	0	0	0	0	0	0	0	6
17. PHARM	0	1	1	0	0	0	1	0	0	0	0	0	3
18. ECOLOGY	0	0	0	0	0	0	0	0	0	0	0	0	0
19. PL. CHEM	1	0	1	0	0	0	0	0	0	0	0	0	2
TOTAL	28	37	39	14	8	5	7	14	6	5	7	4	174
GRAND TOTAL	118				34				22				174