

भारत सरकार/ GOVERNMENT OF INDIA
 पर्यावरण वन मंत्रालय और जलवायु परिवर्तन मंत्रालय/MINISTRY OF ENVIRONMENT FORESTS & CLIMATE CHANGE
 भारतीय वनस्पति सर्वेक्षण/BOTANICAL SURVEY OF INDIA
 निदेशक का कार्यालय/OFFICE OF THE DIRECTOR
 सी.जी.ओ. कॉम्प्लेक्स, तृतीय एम.एस.ओ. भवन/CGO COMPLEX, 3RD MSO BUILDING
 ब्लॉक एफ, पाँचवां और छठा तल/BLOCK F, 5TH & 6TH FLOOR (ROOM NO. 549-555 & 649-655)
 डी एफ ब्लॉक, सेक्टर १, साल्ट लेक सिटी, कोलकाता – ६४/DF BLOCK, SECTOR I, SALT LAKE CITY, KOLKATA – 700 064



संख्या/No.: भा.व.स./BSI – 288/1-AAP/2019 – Tech.

दिनांक/Date: 25.07.2019

सेवा में/To
 All Head of Offices
 Botanical Survey of India

विषय/Sub.: Annual Research Programme of BSI (*on Flora of India* and *on other than Flora of India*) – reg.

महोदय/Sir,

Please find attached the final Annual Research Programme of BSI (*on Flora of India* and *on other than Flora of India*) for the year 2019 – 20 and for some cases for the year 2020 – 21. This Annual Research Programme of BSI has been prepared after the deliberations took place in the Heads of Offices meeting held at BGIR, NOIDA during 15 – 16, April 2019 and after the decisions taken in the subsequent meeting of the Research Advisory & Monitoring Committee of BSI held at CNH during 30 – 31, May 2019.

This is for your information and strict compliance please.

सधन्यवाद/Thanking you,

भवदीय/Yours faithfully,

(वि. के. सिन्हा)/(B. K. SINHA)

वैज्ञानिक 'एफ', तकनीकी अनुभाग, मुख्यालय/Scientist 'F', Technical Section, Hqrs.

संलग्न/Encl.: उपरोक्तानुसार/As above.

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA ON FLORA OF INDIA (2019-20 AND 2020 – 21)

DICOTYLEDONS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 1. | <p><u>Flora of India, Vol. 8</u></p> <p>3 Families: <i>Rosaceae, Chrysobalanaceae, Neurardaceae</i> ca 480 Species</p> <p><u>Team Leader:</u> Dr S. S. Dash, Scientist E</p> <p><u>Team Members:</u></p> <ul style="list-style-type: none"> ▪ Dr. Debasmita Dutta Pramanick, Scientist C ▪ Sri Sanjay Kumar, Botanist | 2019 – 2021 | <p>Q1. Detailed literature survey to be done and 55 species to be described</p> <p>Q2. Detailed literature survey to be done and 55 species to be described</p> <p>Q3. One Herbarium Consultation Tour to Kashmir University and Forest Research Institute by Dr. S. S. Dash. 55 species to be described</p> <p>Q4. One Herbarium Consultation Tour to NBRI Lucknow by Dr. Debasmita. 55 species to be described.</p> <p><u>Species-wise work allotment:</u></p> <ul style="list-style-type: none"> ▪ Dr S. S. Dash: 50 species ▪ Dr Debasmita D Pramanick: 120 species ▪ Sanjay Kumar: 50 species <p>Total: Two Herbarium Consultation Tours</p> |
| 2. | <p><u>Flora of India, Vol.10</u></p> <p>14 Families: <i>Melastomataceae,</i> <i>Lythraceae,</i> <i>Altingiaceae,</i> <i>Sonneratiaceae,</i> <i>Crypteroniaceae,</i> <i>Punicaceae,</i> <i>Onagraceae,</i> <i>Trapaceae,</i> <i>Turneraceae,</i> <i>Passifloraceae,</i> <i>Caricaceae,</i> <i>Curcubitaceae,</i> <i>Begoniaceae,</i> <i>Datiscaceae</i> ca 80 Genera and ca 475 species</p> <p><u>Team Leader:</u></p> <ul style="list-style-type: none"> ▪ Dr B. K. Sinha, Scientist F <p><u>Team Member:</u></p> <ul style="list-style-type: none"> ▪ Dr. S. S. Dash, Scientist E <p><u>Manuscripts available</u></p> <p>Melastomataceae (Dr. G. S Giri) Memecylonaceae (Dr. A. Pramanik & Dr. Moumita) Altingiaceae (Dr. M. Murugesan) Sonneratiaceae (Fascicle 22) Crypteroniaceae (Dr. M. Murugesan) Punicaceae (Dr. M. Murugesan) Onagraceae (Dr. Tapas Paul) Trapaceae (Dr. P. J. Parmer) Turneraceae (Dr. Tapas Paul) Passifloraceae (Dr. P. M. Padhye) Caricaceae (Dr. M. Murugesan) Cucurbitaceae (Fascicle 11) Begoniaceae (Dr. Ammaudin) Datiscaceae incl. <i>Tetramelac</i> (Dr. Sanjappa) Datiscaceae (Dr. M. Murugesan) Lythraceae (Dr. T. Mathew, Dr. M.P. Nayar & Dr. V. Sampath Kumar)</p> | 2019 – 2020 | <p>Q1. Checklist to be prepared and nomenclature to be updated. 120 species to be described.</p> <p>Q2. Checklist to be prepared and nomenclature to be updated. 120 species to be described.</p> <p>Q3. Checklist to be prepared and nomenclature to be updated. 120 species to be described. One Herbarium Consultation Tour to be conducted at BSI, SRC, Coimbatore</p> <p>Q4. Final manuscript to be submitted</p> <p>Total: One Herbarium Consultation Tour</p> <p><u>N. B.:</u></p> <ul style="list-style-type: none"> ▪ Families Cucurbitaceae and Lythraceae will be updated by Dr. B. K. Sinha, Dr. S. S. Dash and Dr. V. Sampath Kumar. ▪ Family Begoniaceae will be updated by Dr. S. S. Dash |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
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| 3. | <p>Flora of India, Vol. 11 10 Families: <i>Cactaceae, Aizoaceae, Molluginaceae, Apiaceae, Araliaceae, Cornaceae, Alangiaceae, Nyssaceae, Caprifoliaceae, Adoxaceae</i> <i>ca</i> 94 Genera and <i>ca</i> 375 species Team Leader: Dr. C. Murugan, Scientist E Team Members: <ul style="list-style-type: none"> ▪ Dr. W. Arisdason, Scientist D ▪ Dr. M. Murugesan, Scientist B ▪ Dr. Manikandan, Scientist D ▪ Dr. Sujana K. A., Scientist D Manuscripts available: Cactaceae (Dr. R. P. Pandey) Aizoaceae (Dr. E. Vajravelu) Molluginaceae (Dr. E. Vajravelu) Apiaceae (Dr P.K. Mukherjee) Araliaceae (Ju Jen & Prof. A.K. Pandey) Caprifoliaceae (Dr. M. Gangop. & Dr. G. S Giri)</p> | 2019 – 2020 | <ul style="list-style-type: none"> ▪ Dr. W. Arisdason, Scientist D: Cactaceae, Aizoaceae and Molluginaceae. <i>ca.</i> 20 species and 02 varieties under 09 genera. One Herbarium Consultation Tour to BSI – SRC in Q4 ▪ Dr. M. Murugesan, Scientist B: Apiaceae (Part 1). <i>ca.</i> 155 species under 12 genera; one herbarium consultation tour to CNH in Q2. ▪ Dr. R. Manikandan, Scientist D: Apiaceae (Part 2). <i>ca.</i> 136 species under 63 genera; one herb. consultation tour to BSI-NRC and FRI in Q3. ▪ Dr. C. Murugan, Scientist E and Dr. W. Arisdason, Scientist D: Araliaceae: 66 species and 13 varieties under 14 genera ▪ Dr. Sujana, K.A., Scientist D: Cornaceae, Alangiaceae, Nyssaceae, Caprifoliaceae and Adoxaceae. <i>ca.</i> 87 species under 14 genera; one herbarium consultation tour to CNH in Q2. <p>Total: Four Herbarium Consultation Tours. Two to CNH, one to BSI-NRC & FRI and one to BSI-SRC</p> |
| 4. | <p>Flora of India, Vol. 14 3 Families: Rubiaceae, Valerianaceae & Dipsacaceae (<i>ca</i> 85 genera & <i>ca</i> 610 species) Team Leader: <ul style="list-style-type: none"> ▪ Dr. M. Gangopadhyay, Scientist D (Retd.) Team Members: Dr. (Mrs.) Aarti Garg, Scientist D Manuscripts available: Rubiaceae (Dr. M. Gangopadhyay) Valerianaceae (Dr. Ved Prakash) Dipsacaceae (Dr. Silpi Das)</p> | 2018 – 2020 | <p>Editing and updatation of the families Rubiaceae, Valerianaceae and Dipsacaceae to be completed and final manuscript to be submitted by March 2020.</p> |
| 5. | <p>Flora of India, Vol. 15 12 Families: Stylidiaceae, Goodeniaceae, Campanulaceae, Sphenocleaceae, Ericaceae, Clethraceae, Pyrolaceae, Monotropaceae, Epacridaceae, Diapensiaceae, Plumbaginaceae, Primulaceae <i>ca</i> 41 genera and <i>ca</i> 500 species Team Leader: Dr A. A. Mao, Director Team Members: Dr. S. S. Dash, Scientist E Dr. Umesh Tiwari, Scientist C Dr. Vijay Mastakar, Botanical Assistant Manuscripts available: Stylidiaceae (Dr. S. Bandyopadhyay) Goodeniaceae (Dr. T. A. Rao) Campanulaceae (Fascicle 22) Sphenocleaceae (Dr. S. Bandyopadhyay) Ericaceae excl. <i>Agapetes</i> & <i>Rhododendron</i> (Dr. S. Panda) Ericaceae (Only <i>Agapetes</i>) (Dr. Deepanweeta) Clethraceae (Dr. S. Bandyopadhyay) Pyrolaceae (Dr. S. Bandyopadhyay) Monotropaceae (Dr. S. Bandyopadhyay) Epacridaceae (Dr. S. Bandyopadhyay) Diapensiaceae (Dr. S. Bandyopadhyay) Primulaceae (Dr. S. K. Basak)</p> | 2019 – 2020 | <ul style="list-style-type: none"> ▪ Genus <i>Rhododendron</i> will be described by Dr. A. A. Mao and Dr. S. S. Dash ▪ Campanulaceae will be updated by Dr. S. S. Dash, Dr. Umesh Tiwari and Dr. Vijay Mastakar ▪ Genus <i>Agapetes</i> of family Ericaceae will be updated by Dr. Deepanweeta Banik ▪ Ericaceae except <i>Rhododendron</i> and <i>Agapetes</i> will be described by Dr. S. Panda ▪ The Family Primulaceae including <i>Primula</i> will be described by Dr. Umesh Tiwari. ▪ One Herbarium Consultation Tour to BSI-SHRC and BSI-NRC in Q3 by Dr. Umesh Tiwari. ▪ The family Plumbaginaceae will be described by Dr. Vijay Mastakar <p>Total: Two Herbarium Consultation Tours.</p> |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
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| 6. | Flora of India, Vol. 16 8 Families: Myrsinaceae, Sapotaceae, Ebenaceae, Styracaceae, Symplocaceae, Oleaceae, Salvadoraceae, Apocynaceae <i>ca</i> 69 genera and <i>ca</i> 389 species Team Leader: Dr. W. Ariadason, Scientist D Manuscript Available: Myrsinaceae (Dr. S. N. Biswas, Dr. A. Pramanik & Dr. Rijupalika Roy) Sapotaceae (Rakesh Kumari & K. Tothathri) Ebenaceae Genus- <i>Diospyrus</i> (Dr. V. Singh) Symplocaceae (Fascicle 22) Oleaceae (Dr. S. K. Srivastava) Salvadoraceae (Fascicle 22) Apocynaceae (Anukul Dutta & M. P. Nayar) | 2019 – 2020 | Compiled and updated manuscript to be submitted by March 2020. |
| 7. | Flora of India, Vol. 17 5 Families: Asclepiadaceae, Loganiaceae, Buddlejaceae, Gentianaceae, Menyanthaceae <i>ca</i> 114 genera and <i>ca</i> 641 species Team Leader: Dr. J. Jayanthi, Scientist D Team Member: Dr. Prachiti D. Mule, Botanical Assistant Manuscript Available: Asclepiadaceae (Flora of India, Fascicle 24) Loganiaceae (Dr. P. Lakshminarasimhan) Buddlejaceae (Dr. P.V. Prasanna) Gentianaceae (Dr. Sharmistha Gupta) Menyanthaceae (Dr P.G. Diwakar) | 2018 – 2020 | Q1. Literature survey and collection of protologues. Updation of description of family Asclepiadaceae and Gentianaceae. Q2. Herbarium consultation tour to BSI-NRC. Updation of description of family Asclepiadaceae and Gentianaceae. Q3. Herbarium consultation tour to CNH. Updation of nomenclature and citation. Updation of taxonomic description. Updation of distribution and ecology of family Asclepiadaceae, Gentianaceae and Menyanthaceae Q4. Preparation of updated key to genus and species of family Asclepiadaceae and Gentianaceae. Compilation of updated manuscript of all families of Volume 17 for final submission Total: Two Herbarium Consultation Tours. |
| 8. | Flora of India, Vol. 18 6 Families: Polemoniaceae, Hydrophyllaceae, Boraginaceae, Convolvulaceae, Cuscutaceae, Solanaceae <i>ca</i> 73 genera and <i>ca</i> 625 species Team Leader: Dr. S. L. Meena, Scientist D Team Member: <ul style="list-style-type: none"> ▪ Dr. Sanjay Mishra, Scientist C ▪ Dr. P. Hari Krishna, Botanical Assistant Manuscript Available: Polemoniaceae (S. K. Das Das & N. P. Singh) Hydrophyllaceae (N. P. Singh & S. K. Das Das) Boraginaceae (Dr P. M. Padhye) Convolvulaceae (Dr. P. J. Parmar) Cuscutaceae (Dr. P. J. Parmar) Solanaceae (Dr. P. Daniel & Dr. Reema Kumari) | 2019 – 2020 | Q1. Screening of literature, preparation of checklist, procurement of herbarium specimens from different Regional centres of BSI. Updation of 200 Spp. of families Polemoniaceae, Hydrophyllaceae & Boraginaceae Q2. Updation of 200 Spp. of family, Boraginaceae and Convolvulaceae. One Herbarium Consultation Tour to BSI-NRC. Q3. Updation of 225 Spp. of family, Convolvulaceae, Cuscutaceae and Solanaceae. One Herbarium Consultation Tour to BSI-SRC and to BSI-WRC. Q4. Finalisation and submission of final manuscript. Total: Two Herbarium Consultation Tours. |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
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| 9. | <p><u>Flora of India, Vol.19</u> 3 Families: Scrophulariaceae (series <i>Pseudosolaneae</i>, <i>Antirrhinideae</i> and <i>Rhinanthideae</i>), Orobanchaceae and Lentibulariaceae <i>ca</i> 68 genera and <i>ca</i> 570 species <u>Team Leader:</u> Dr. Arti Garg, Scientist D <u>Team Member:</u></p> <ul style="list-style-type: none"> ▪ Dr. O. N. Maurya, Scientist C ▪ Dr. Achuta Nand Shukla, Scientist C ▪ Dr. Ashutosh Verma, Scientist C ▪ Dr. Manas Debta, Scientist C ▪ Sri Anand Kumar, Botanist <p><u>Manuscript Available:</u></p> <ul style="list-style-type: none"> ▪ 168 species of Series <i>Pseudosolaneae</i> and Series <i>Antirrhinideae</i> (Dr. Soumen Gantait) ▪ 10 genera and <i>ca.</i> 136 species of series <i>Rhinanthideae</i> (Smt. Munmum Munshi) ▪ 7 Genera and 36 Species of Family <i>Orobanchaceae</i> (Dr A. N. Henry & Sri Anil Kr.) | 2019 – 2020 | <p>Work allotment :</p> <ol style="list-style-type: none"> 1. Dr. Arti Garg: Genus <i>Pedicularis</i> (85 species). 2. Dr. O. N. Maurya & Sri Anand Kumar: Series <i>Pseudosolaneae</i>, Series <i>Antirrhinideae</i> and Family <i>Orobanchaceae</i>. 3. Drs. A. N. Shukla & Ashutosh Verma: Series <i>Rhinanthideae</i> 4. Dr. Manas Debta: Family: <i>Lentibulariaceae</i> (c. 86 species of <i>Utricularia</i>, <i>Pinguicula</i> and <i>Veronica</i>) <p>Q1. Consultation of literature and preparation of checklist of all the families. Q2. One field tour to western Himalaya by Dr. Arti Garg. Another field tour to western Himalayas combined with one herbarium consultation tour to Kashmir University and FRI by Dr. O. N. Maurya and Sri Anand Kumar. Updating of taxonomic account of 210 species. One field tour to North Sikkim (Lachen and Lachung Valley) by Dr. A. N. Shukla, Scientist C Q3. One Herbarium Consultation Tour to ASSAM, CNH and FRI of 21 days by Dr. M. R. Debta for critical study of specimens of genus <i>Veronica</i> and family <i>Lentibulariaceae</i>. Preparation of manuscript Q4. Finalisation and submission of manuscript</p> <p>Total: Three Field Tours & One Herb. Con. Tour.</p> |
| 10. | <p><u>Flora of India, Vol. 20</u> 4 Families: Gesneriaceae, Bignoniaceae, Pedaliaceae and Acanthaceae 108 Genera and <i>ca.</i> 646 species <u>Team Leader:</u> Dr. P. Lakshminarasimhan, Scientist E <u>Team Member:</u></p> <ul style="list-style-type: none"> ▪ Dr. W. Arisdason, Scientist D ▪ Dr. K. Karthigeyan, Scientist D ▪ Dr. Gopal Krishna, Bot. Asstt. <p><u>Manuscript available:</u> Gesneriaceae (Dr. U. C. Bhattacharya) Bignoniaceae (Dr. S. K. Srivastava) Pedaliaceae (Dr. N. C. Nair) Tribe Justiceae (Dr. Jayashree Bhattacharya) Tribe Ruellieae (Dr. D. Albertson & Dr. P. Venu) Subtribes <i>Andrographideae</i>, <i>Barlerieae</i> and <i>Asystasieae</i> of tribe <i>Justiceae</i> (Dr. Tinku Ghosh) Acantheae, <i>Nelsonieae</i> and <i>Thunbergieae</i> (Dr. Debatri Panja Kundu & Dr. P. Lakshminarasimhan) Genus <i>Andrographis</i> (Dr. G. Gnanasekaran)</p> | 2018 – December 2019 | <p><i>Strobilanthes</i> of North East India & Himalayas will be described by Dr D. K. Roy. The entire final and updated manuscript is to be submitted by March 2020.</p> |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 11. | <p>Flora of India, Vol. 21 5 Families: Verbenaceae, Symphrometaceae, Avicenniaceae, Lamiaceae and Plantaginaceae 73 genera and ca 500 species</p> <p>Team Leader: Dr V. Sampath Kumar, Scientist D</p> <p>Team Member:</p> <ul style="list-style-type: none"> ▪ Dr. Gopal Krishna, Botanical Assistant ▪ Dr. Anant Kumar, Botanical Assistant <p>Manuscript available: Lamiaceae Genus <i>Leucus</i> (Dr. V. Singh) Tribe Stachydeae Genus <i>Gomphostemma</i> (Dr. R. P. Pandey) Genus <i>Stachys</i> (Dr. R. P. Pandey) Genus <i>Teucrium</i> (Dr. R. P. Pandey) Genus <i>Rubiteuris</i> (Dr. R. P. Pandey)</p> | 2019 – 2020 | <p>Quarter wise work Allotment: 1st and 2nd Quarter:</p> <ul style="list-style-type: none"> ▪ Tribe <i>Nepeteae</i> to be finalised by Dr. V. Sampath Kumar (ca 50 spp.) ▪ Symphoremataceae and Avicenniaceae to be studied by Dr. Gopal Krishna (ca 15 spp.) ▪ Plantaginaceae to be studied by Dr. Anant Kumar (ca 12 spp.) <p>3rd Quarter:</p> <ul style="list-style-type: none"> ▪ Tribe Stachydeae (Lamiaceae) to be studied by Dr. V. S. Kumar (excl. <i>Leucas</i>, <i>Scutellaria</i> & <i>Stachys</i>) – ca 35 spp. ▪ Editing of the tribe Ocimeae (Lamiaceae) (excl. <i>Isodon</i>, <i>Plectranthus</i>* and <i>Siphocranion</i>) ca 65 spp. including incorporating nomenclatural changes by the team leaders and team members (<i>from the thesis submitted by Dr. Sravani Banerjee, student of Dr. M. Sanjappa</i>)(*For <i>Plectranthus</i>, request made to Dr. Smitha & Dr. P. Sunoj Kumar of Calicut University) ▪ One Herbarium Consultation Tour to BSI-ERC by Dr. Gopal Krishna. <p>4th Quarter:</p> <ul style="list-style-type: none"> ▪ Tribe Ajugeae (Lamiaceae) to be described by Dr. V. Sampath Kumar (ca 20 spp.) ▪ Editing of tribe Mentheae (Lamiaceae) including incorporating nomenclatural changes to be done by the team leaders and team members (ca 85 spp.) <p>Total: Two Herbarium consultation tours</p> |
| 12. | <p>Flora of India, Vol. 22 21 Families: Nyctaginaceae, Amaranthaceae, Chenopodiaceae, Basellaceae, Phytolacaceae, Polygonaceae, Podostemaceae, Nepenthaceae, Rafflesiaceae, Mitrastemonaceae, Aristolochiaceae, Piperaceae, Saururaceae, Chloranthaceae, Myristicaceae, Monimiaceae, Lauraceae, Hernandiaceae, Proteaceae, Thymeleaceae, Elaeagnaceae ca. 128 genera 762 species</p> <p>Team Leader: Dr. Manas Bhaumik, Scientist E</p> <p>Team Members:</p> <ul style="list-style-type: none"> ▪ Dr. A. K. Sahoo, Scientist E ▪ Dr. Debasmita Dutta Pramanick, Scientist C ▪ Dr. Sankar Rao, Scientist C ▪ Dr. Geeta Chowdhury, Botanist ▪ Dr. (Mrs.) Sudeshna Dutta, Bot. Asstt. ▪ Sri S. K. Sharma, Sr. Pres. Asstt. <p>Manuscript available: Chenopodiaceae (Dr. Tapas Paul) Polygonaceae (Dr. R. C. Srivastava, Dr. S. S. Dash) Podostemaceae (Dr. Alok Bhattacharya) Nepenthaceae, Rafflesiaceae, Mitrastemonaceae (D. P. Dam, Namita Dam and B. K. Das) Phytolacaceae (Dr. H. S. Debnath) Piperaceae (Prof. P. K. Mukherjee) Chloranthaceae: (Dr. H. S. Debnath) Monimiaceae: (Dr. H. S. Debnath) Lauraceae (Dr. Mohan Gangopadhyay, Dr. Tapas Chakraborty and Dr. Trina Bhuiya)</p> | 2019 – 2020 | <p>Work allotment for updation of available manuscript:</p> <ul style="list-style-type: none"> ▪ Nyctaginaceae: Dr. Debasmita Dutta Pramanick ▪ Amaranthaceae: Dr. Geeta Chowdhury ▪ Basellaceae: Dr. (Mrs.) Sudeshna Dutta ▪ Phytolacaceae: Dr. A. K. Sahoo & Sri S. K. Sharma ▪ Polygonaceae: Dr. Manas Bhaumik ▪ Podostemaceae: Dr. M. Bhaumik & Sri S. K. Sharma ▪ Nepenthaceae: Dr. (Mrs.) Sudeshna Dutta ▪ Rafflesiaceae: Dr. (Mrs.) Sudeshna Dutta ▪ Mitrastemonaceae: Dr. (Mrs.) Sudeshna Dutta ▪ Aristolochiaceae: Dr. M. Bhaumik & Dr. (Mrs.) S. Dutta ▪ Piperaceae: Dr. M. Bhaumik & Sri S. K. Sharma ▪ Saururaceae: Dr. M. Bhaumik & Dr. Sankar Rao ▪ Chloranthaceae: Dr. A. K. Sahoo & Dr. (Mrs.) S. Dutta ▪ Myristicaceae: Dr. Geeta, Dr. Sudeshna & Sri Sharma ▪ Monimiaceae: Dr. Manas Bhaumik ▪ Lauraceae: Dr. Manas Bhaumik ▪ Hernandiaceae: Dr. A. K. Sahoo & Sri S. K. Sharma ▪ Proteaceae: Dr. Manas Bhaumik ▪ Thymeleaceae: Dr. Bhaumik, Dr. Sahoo and Dr. Dutta ▪ Elaeagnaceae: Dr. Geeta, Dr. Sudeshna & Sri Sharma <p>Preparation of the manuscript with keys for all the genera and species of the allotted families and Final manuscript to be submitted in March 2020</p> |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 13. | <p><u>Flora of India, Vol. 24</u> 11 Families: Urticaceae, Moraceae, Cannabaceae, Ulmaceae, Juglandaceae, Myricaceae, Casuarinaceae, Fagaceae, Betulaceae, Salicaceae, Ceratophyllaceae <i>ca.</i> 63 genera and 363 species <u>Team Leader:</u> Dr. P. K. Pusalkar, Scientist E <u>Team Member:</u> Dr. Priyanka Ingle, Scientist B <u>Manuscript available:</u> Urticaceae (Dr. S. K. Murti) Moraceae (only <i>Ficus</i> of peninsular India by Dr. J. V. Sudhakar, <i>Ficus</i> of W. Himalayas by Dr. L.B. Choudhary and <i>Ficus</i> of North East India by Dr. Gautam Kumar Upadhyay) Casuarinaceae (Dr. B. P. Uniyal) Fagaceae (Dr. Vinay Ranjan & Shankhamala Mitra) Salicaceae (Dr. A. Pramanik and Dr. Sukla Chanda) Ceratophyllaceae (Dr. B. P. Uniyal)</p> | 2019 – 2020 | <p>Q1. Completion and updation of families Ceratophyllaceae, Cannabaceae, Platanaceae, Myricaceae and Casuarinaceae. Q2. Completion and updation of families Ulmaceae, Juglandaceae and Betulaceae. Q3. Completion and updation of family Moraceae (excl. <i>Ficus</i>) and Urticaceae (partly). One Herbarium Consultation Tour by Dr. Pusalkar at BSI – NRC. Another Herbarium Consultation Tour by Dr. Priyanka to BSI – SRC. One field tour to parts of Western Ghats and Western Coast region for field photographs by Dr. Pusalkar. Q4. Completion and updation of remaining part of the family Urticaceae. Finalisation and submission of manuscript.</p> <p>Total: 2 Herb. Consultation Tours and 1 Field tour</p> |

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA ON FLORA OF INDIA (2019-20 AND 2020 – 21)

MONOCOTYLEDONS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-----------------------------|---|
| 14. | <p>Flora of India, Vol. 25 (ca 85 genera & 725 species) Family: Hydrocharitaceae (10 genera, 33 species) Family: Burmanniaceae (3 genera, 11 species) Family: Orchidaceae (72 genera, ca. 681 species) Sub-family Apostasioideae (1 genus, 3 species) Sub-family Vanilloideae (6 genera, 16 species) Sub-family Cyripedioideae (2 genera, 13 species) Sub-family Orchidoideae (37 genera, 239 species) Sub-family Epidendroideae (in part) Tribe Neottieae (4 genera, 31 species) Tribe Tropicidae (2 genera, 7 species) Tribe Gastrodieae (2 genera, 9 species) Tribe Nervilieae (3 genera, 18 species) Tribe Arethuseae (11 genera, 75 species) Tribe Malaxideae Sub-tribe Dendrobiinae (4 genera, 270 spp.) Flora of India, Vol. 26 (ca. 83 genera & 579 spp.) <i>Remaining part of Family Orchidaceae</i> Sub-family Epidendroideae Tribe Malaxideae Sub-tribe Malaxidinae (4 genera, 134 species) Tribe Cymbidieae (4 genera, 59 species) Tribe Epidendreae (7 genera, 16 species) Tribe Collabieae (15 genera, 58 species) Tribe Podochileae (9 genera, 90 species) Tribe Vandeae (44 genera, 222 species)</p> <p>Team Leader: Dr. D. K. Agrawala, Scientist D</p> <p>Team Members:</p> <ul style="list-style-type: none"> ▪ Dr. J. S. Jalal, Scientist D ▪ Dr. Chhaya Deori, Scientist D ▪ Dr. Avishek Bhattacharjee, Scientist C | March 2019 to June 2020 | <p>Responsibility of Dr. D.K. Agrawala: <i>Apart from overall coordination for compilation and submission of manuscript, work on 81 genera and 624 species to be completed.</i> Sub-family: Vanilloideae (5 genera, 14 species) Sub-family: Orchidoideae (9 genera 22 species) Sub-family: Epidendroideae (67 genera, 586 species)</p> <p>Responsibility of Dr. J. S. Jalal: <i>Work on 22 genera and 242 species to be completed</i> Family: Burmanniaceae (3 genera 11 species). Sub-family: Orchidoideae (11 genera, 138 species). Sub-family: Epidendroideae (8 genera, 93 species).</p> <p>Responsibility of Dr. Chaya Deori: <i>Work on 36 genera and 228 species to be completed</i> Sub-family: Apostasioideae (1 genus, 3 species) Sub-family: Vanilloideae (1 genus, 2 species) Sub-family: Cyripedioideae (2 genera, 13 species) Sub-family: Orchidoideae (4 genera 7 species) Sub-family: Epidendroideae (28 genera, 201 species)</p> <p>Responsibility of Dr. Avishek Bhattacharjee: <i>Work on 29 genera and 210 species to be completed</i> Family: Hydrocharitaceae (10 genera, 33 species) Sub-family: Orchidoideae (13 genera, 72 species) Sub-family Epidendroideae (6 genera, 105 species)</p> <p>Deliverable during April 2019 – March 2020 Data collection, compilation & preparation draft mss.</p> <p>Deliverable during April 2020 – June 2020.</p> <ul style="list-style-type: none"> • Checking uniformity and consistency. • Preparation of Key to Genera • Editing and final submission of the manuscript. |
| 15. | <p>Flora of India, Vol. 27 17 Families: Agavaceae, Aloeacaceae, Amaryllidaceae, Asparagaceae, Bromeliaceae, Cannaceae, Costaceae, Dioscoreaceae, Hypoxidaceae, Iridaceae, Liliaceae, Marantaceae, Musaceae, Smilacaceae, Stemoniaceae, Taccaceae, Zingiberaceae</p> <p>ca 64 genera and ca 592 species</p> <p>Team Leader: Dr. Rajib Gogoi, Scientist E</p> <p>Team Members:</p> <ul style="list-style-type: none"> ▪ Dr. J. H. Franklin Benjamin, Scientist C ▪ Dr. Mahua Pal, Botanist ▪ Dr. Basant Kumar Singh, Botanical Assistant <p>Manuscript available: Dioscoreaceae (Dr. Aqramul Haque) Smilacaceae (Dr. G. V. S. Murthy) Musaceae (Dr. V. Singh) Zingiberaceae (Prof. M. Sabu) Iridaceae (Dr. D. D. Bahali) Bromeliaceae (Dr. P. G. Diwakar) Cannaceae (Dr. P. G. Diwakar)</p> | March 2019 to December 2020 | <p>Work allotment for updation of available manuscript: Asparagaceae: Dr. Basant Singh Liliaceae: Dr. Rajib Gogoi & Dr. Mahua Pal Aloeacaceae: Dr. J. H. Franklin Benjamin Amaryllidaceae: Dr. J. H. Franklin Benjamin Bromeliaceae: Dr. J. H. Franklin Benjamin Cannaceae: Dr. J. H. Franklin Benjamin Costaceae: Dr. J. H. Franklin Benjamin Hypoxidaceae: Dr. J. H. Franklin Benjamin Iridaceae: Dr. J. H. Franklin Benjamin Marantaceae: Dr. J. H. Franklin Benjamin Stemoniaceae: Dr. J. H. Franklin Benjamin Taccaceae: Dr. J. H. Franklin Benjamin Dioscoreaceae: Dr. Rajib Gogoi</p> <p>Deliverables during April 2019 – March 2020 Q1. Reference collection, updation of the nomenclature. Q2. Reference collection, updation of the nomenclature. One field tour to Arunachal Pradesh by Dr. Franklin. Q3. Reference collection, updation of the nomenclature. One Herbarium consultation tour to NBRI by Dr. Rajib Gogoi. Another Herbarium Consultation Tour to BSI-NRC and FRI by Dr. Mahua Pal. Another Herbarium Consultation Tour to CNH by Dr. Franklin Q4. Reference collection, updation of the nomenclature. One Herb. Cons. tour to BSI-ERC by Dr. R. Gogoi</p> <p>Total: Five Herbarium consultation tours</p> <p>Deliverables during April 2020 – December 2020 Submission of mss. alongwith keys and illustrations.</p> |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|---|
| 16. | <p>Flora of India, Vol. 28 24 Families: Alismataceae, Aponogetonaceae, Araceae, Arecaceae, Butomaceae, Commelinaceae, Cymodoceaceae, Flagellariaceae, Juncaceae, Juncaginaceae, Lemnaceae, Limnocharitaceae, Najadaceae, Pandanaceae, Philydraceae, Pontederiaceae, Potamogetonaceae, Ruppiaceae, Trilliaceae, Triuridaceae, Typhaceae, Uvulariaceae, Xyridaceae, Zannichelliaceae, <i>ca</i> 108 genera and <i>ca</i> 526 species</p> <p>Team Leader: Dr. M. U. Sharief, Scientist E</p> <p>Team Members:</p> <ul style="list-style-type: none"> ▪ Dr. S. S. Hameed, Scientist E ▪ Dr. Vinay Ranjan, Scientist D ▪ Dr. Rajib Gogoi, Scientist E ▪ Dr. B. K. Singh, Botanical Assistant ▪ Sri Anant Kumar, Botanical Assistant <p>Manuscript available: Aponogetonaceae: Dr. M.S. Mondal & R. Guha Araceae: Sasikala & Dr. E. Vajravelu Commelinaceae: Dr.M. Nandikar & Dr. Gaurav Juncaceae: Dr. Geeta Chhetri Juncaginaceae: Dr. Geeta Chetri Lemnaceae: Dr. M. S. Mondal & Ratna Guha Potamogetonaceae: Dr. Mondal & R. Guha Alismataceae: Fascicle 23 Uvulariaceae: Fascicle 23 Trilliaceae: Fascicle 23</p> | 2019 – 2020 | <p>Work allotment for updation of available manuscript: Juncaceae: Dr. Rajib Gogoi Juncaginaceae: Dr. Rajib Gogoi Pontederiaceae: Dr. M. U. Sharief Philydraceae: Dr. M. U. Sharief Commelinaceae: Dr. M. U. Sharief Flagellariaceae: Dr. M. U. Sharief Limnocharitaceae: Dr. M. U. Sharief Pandanaceae: Dr. S. S. Hameed Arecaceae: Dr. S. S. Hameed Xyridaceae: Dr. Vinay Ranjan Typhaceae: Dr. Vinay Ranjan Ruppiaceae: Dr. Vinay Ranjan Najadaceae: Dr. Basant Kumar Singh Aponogetonaceae: Dr. Basant Kumar Singh Potamogetonaceae: Dr. Basant Kumar Singh Triuridaceae: Dr. Anant Kumar Butomaceae: Dr. Anant Kumar Zannichelliaceae: Dr. Anant Kumar Cymodoceaceae: Dr. Anant Kumar Lemnaceae: Dr. Anant Kumar</p> <p>Q1. Reference collection, updation of the nomenclature and description. Q2. Reference collection, updation of the nomenclature and description. Q3. Reference collection, updation of the nomenclature and description. One Herbarium Consultation Tour to BSI-ANRC for updation of the families Philydraceae and Flagellariaceae Q4. Preparation of Key to Genera. Editing and final submission of the manuscript.</p> |
| 17. | <p>Flora of India, Vol. 29 2 Families: Cyperaceae and Eriocaulaceae</p> <p>Cyperaceae: (<i>ca</i> 610 taxa comprising <i>ca</i> 555 species 23 subspecies & 32 var. under 33 genera)</p> <p>Eriocaulaceae: (<i>ca</i> 85 species)</p> <p>Team Leader: Dr. V. P. Prasad, Scientist E</p> <p>Manuscript available: Eriocaulaceae: Dr. R. Ansari & Dr. N. P. Balakr Cyperaceae: Dr. (Ms.) Veena Chandra Tribe: Schoeneae and Sclerieae (Fascicle 27) Genus <i>Carex</i>: (Dr. A. Maji & Dr. V. P. Prasad) Sub Genus <i>Vigneae</i>: (Dr. B. Jana & Dr. V. S. Kr.) Genus <i>Kobresia</i>: (Dr. B. Jana & Dr. R. C. Sriv.)</p> | 2019 – 2020 | Reference collection, updation of the nomenclature and description. Preparation of Key to Genera. Editing and final submission of the manuscript. |
| 18. | <p>Flora of India, Vol. 30 Family: Poaceae – Bambusoideae <i>ca</i> 30 genera and <i>ca</i> 150 species</p> <p>Team Leader: Dr. Pushpakumari, Scientist D</p> | 2019 – 2020 | Reference collection, updation of the nomenclature and description. Preparation of Key to Genera. Editing and final submission of the manuscript. |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|---|
| 19. | <p>Flora of India, Vol. 31 & Vol. 32 Family: Poaceae <i>ca.</i> 248 genera and <i>ca.</i> 1480 species</p> <p>Team Leader: Dr. P.V. Prasanna, Scientist F</p> <p>Team Members: Dr. K.A.A. Kabeer, Scientist D Dr. L. Rasingam, Scientist D Dr. Manish Khandwal, Scientist D Dr. C. S. Purohit, Scientist C Dr. Sangita Dey, AJCB PDF Dr. K. Prasad, AJCB PDF Dr. C. P. Vivek, Botanical Assistant Mr. S. Nagaraju, Botanical Assistant Dr. S. Arumugam, Bot. Assistant Dr. J. Swamy, Botanical Assistant</p> <p>Contributors</p> <ul style="list-style-type: none"> ▪ Dr. P.Singh, Ex- Director & Mrs. Suthrishna Kar, Ex Res. Sch. 1 Genus 37 taxa <i>Festuca</i> (37) for Vol. 31 ▪ Dr. Alok Chorghhe, Ex Res. Sch. 5 Genera 37 taxa <i>Hyparrhenia</i> (4), <i>Parahyparrhenia</i> (1), <i>Pseudanthistiria</i>(3), <i>Themeda</i> (21), <i>Iseilema</i> (8) for Vol. 32 ▪ Dr. S.R. Yadav, Dr. G. Potdar & Dr. K.V.C. Gosavi from Kolhapur University. 5 Genera 8 taxa <i>Danthonidium</i> (1), <i>Hygroryza</i> (1), <i>Indopoa</i> (1), <i>Centotheca</i> (3), <i>Silentvalleya</i> (2) for Vol. 31 15 Genera 72 taxa <i>Hubbardia</i> (2), <i>Diectomis</i> (1), <i>Hemisorghum</i> (1), <i>Bhidea</i> (3), <i>Thelepogon</i> (1), <i>Pseudodichanthium</i> (1), <i>Trilobachne</i> (1), <i>Triplopogon</i> (1), <i>Limnopoa</i> (1), <i>Apocopsis</i> (5), <i>Dichanthium</i> (11), <i>Bothriochloa</i> (14), <i>Glyphochloa</i> (16), <i>Capillipedium</i> (8), <i>Heteropogon</i> (6) for Vol. 32 <p>Dr. S.K. Srivastava 1 Genus 63 taxa <i>Ischaemum</i> (63)</p> | 2019 – 2020 | <p>Work allotment: <u>Dr. P. V. Prasanna, Scientist F:</u> Overall co-ordination, compilation and submission of final manuscript. <u>Dr. K.A.A. Kabeer, Scientist D:</u> 20 Genera and 125 Taxa</p> <ul style="list-style-type: none"> ▪ Introductory chapters. ▪ Vol. 31: 12 genera & 36 taxa [Ehrharta (6), Lygeum, Briza, Milium (1), Trikeria (2), Cynosurus (2), Lamarckia (1), Lolium (7), Vulpia (5), Castellia (1), Puccinellia (7), Briza (3), Streblochaete (1)] ▪ Vol. 32: 8 genera & 89 taxa [Sorghum (59), Pseudosorghum (1), Sorghastrum (1), Cleistachne(2), Vetiveria (2), Chrysopogon (21), Eremopogon (1), Euclasta (2)] <p><u>Dr. L. Rasingam, Sci. D & Sri J. Swamy, Bot. Asstt:</u> 50 Genera & 168 Taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 42 genera & 99 taxa [Leptaspis (1), Phaenosperma (1), Streptogyna (1), Lophatherum (1), Elytrophorus (1), Zenkeria (4), Danthonia (3), Schismus (2), Centropodia (1), Dichaetaria (1), Cortaderia (1), Arundo (1), Phragmites (3), Thysanolaena (2), Stipagrostis (8), Aristida (10), Enneapogon (4), Aeluropus (1), Eragrostiella (4), Coelachyrum (1), Eleusine (3), Acrachne (3), Dactyloctenium (4), Desmostachya (1), Myriostachya (1), Pommereulla (1), Tetrapogon (2), Enteropogon (3), Trichloris (2), Gymnopogon (1), Microchloa (2), Cynodon (7), Schoenefeldia (1), Spartina (1), Bouteloua (3), Melanocenchris (3), Hilaria (1), Tragus (1), Zoysia (3), Dignathia (1), Lopholepis (1) and Perotis (3)] ▪ Vol. 32: 8 genera & 69 taxa [Nanooravia (1) Dimeria (52), Tripsacum (2), Zea (1), Euchlaena (1), Chionachne (3), Polytoxa (3) and Coix (6)] <p><u>Dr. Manish Khandwal, Scientist D:</u> 38 Genera & 223 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 25 genera & 155 taxa [Pseudodanthonia (1), Duthiea(1), Helictotrichon (5), Avena (9), Trisetum (9), Trisetaria (1), Koeleria (3), Rostraria (3), Deschampsia (2), Holcus (2), Aira (1), Hierochloe (3), Anthoxanthum (8), Phalaris (6), Agrostis (26), Aniselytron (1) Calamagrostis (12), Deyeuxia (10) Lagurus (1), Polypogon (4), Cyathopus (1), Alopecurus (7), Phleum (4), Stipa (29), Piptatherum (6) ▪ Vol. 32: 13 genera & 68 taxa [Spodiopogon (6), Saccharum (16), Eriochrysis (1), Miscanthus (3), Sclerostachya (2), Imperata (2), Eulalia (18), Lophopogon (3), Pogonatherum (4), Pseudopogonatherum (1), Eulaliopsis (2), Microstegium (9), Germainia (1) <p><u>Dr. C. S. Purohit, Scientist C:</u> 32 genera & 161 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 13 genera & 20 taxa [Dactylis (1), Colpodium (1), Paracolpodium (1), Hyalopoa (1), Catabrosella (1), Catabrosa (1), Phippsia (1), Eremopoa (3), Catapodium (1), Sclerochloa (1), Parapholis (1), Glyceria (2), Melica (5) ▪ Vol. 32: 19 genera & 141 taxa [Pseudechinolaena (1), Oplismenus (3), Ichnanthus (2), Panicum (38), Hymenachne (4), Sacciolepis (4), Ottochloa (1), Cyrtococcum (7), Acroceras (3), Echinochloa (8), Alloteropsis (2), Brachiaria (27), Pseudobrachiaria (1), Urochloa (8), Eriochloa (2), Thuarea (1), Paspalum (1), Axonopus (1), Digitaria (29) <p><u>Dr. Sangita Dey, AJCB PDF:</u> 23 Genera & 172 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 10 genera & 47 taxa [Neyraudia (2), Leptochloa (5), Diplachne (1), Kengia (2) Orinus (1), Tripogon (29), Oropetium (3), Halopyrum (1), Dinebra (2), Ochthochloa (1) ▪ Vol. 32: 13 genera & 125 taxa [Setaria(20), Holcolemma(1), Stenotaphrum (1), Tricholaena (1), Melinis (2), Pseudoraphis (3), Cenchrus (22), Trachys (4), Spinifex (1), Apluda (2), Pogonachne (1), Sehima (4) <p><u>Dr. K. Prasad, AJCB PDF:</u> Key and 4 genera & 15 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: Key to 248 genera and key to the Tribes, sub-tribes and ▪ Vol. 32: 4 genera & 15 taxa [Porteresia (1), Oryza (12) , Leersia (1), and Zizania (1)] |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|----------------|---|-------------|--|
| 19 (contd.) | <p>Flora of India, Vol. 31 & Vol. 32 (Contd.) Family: Poaceae <i>ca.</i> 248 genera and <i>ca.</i> 1480 species</p> | 2019 – 2020 | <p>Work allotment (Contd.): <u>Dr. C. P. Vivek, Botanical Assistant:</u> 11 genera & 156 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 3 genera & 68 taxa [Littledalea (1), Bromus (20), Eragrostis (47)] ▪ Vol. 32: 8 genera & 88 taxa [Isachne (38), Coelachne (5), Sphaerocaryum (1), Eriachne (2), Chandrasekharania (1), Jansenella (2), Arundinella (26), Garnotia (13)] <p><u>Mr. S. Nagaraju, Botanical Assistant:</u> 13 Genera & 41 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: Chloris (11). ▪ Vol. 32: 12 genera & 30 taxa [Elionurus (1), Phacelurus (2), Vossia (1), Hemarthria (5), Lasiurus (1), Coelorachis (4), Eremochloa (2), Rottboellia (1), Robynsiocloa (1), Manisuris (1), Ophiuros (3), Mnesithea (8)] <p><u>Dr. S. Arumugam, Bot. Assistant:</u> 23 Genera & 139 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 19 genera & 87 taxa [Brachypodium (4), Elymus (27), Pseudoroegneria (2), Elytrigia (1), Hystrix (1), Leymus (1), Hordeum (8), Agropyron (1), Triticum (7), Patropyrum (1), Secale (2), Aegilops (1), Eremopyrum (1), Eremochloa (1), Sporobolus (18), Crypsis (2), Urochondra (1), Muhlenbergia (6), Lepturus (2)] ▪ Vol. 32: 4 genera & 52 taxa [Andropogon (8), Cymbopogon (23), Schizachyrium (6), Arthraxon (15)] <p><u>Miss. Ruma Bhadra, JPF:</u> 01 genus & 51 taxa</p> <ul style="list-style-type: none"> ▪ Vol. 31: 01 genera & 51 taxa [Poa (51)] |

ANNUAL RESEARCH PROGRAMME OF BOTANICAL SURVEY OF INDIA OTHER THAN FLORA OF INDIA (2019 – 2020)

ARUNACHAL PRADESH REGIONAL CENTRE, ITANAGAR

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|--|
| 1. | Pteridaceae of India (excluding Genus <i>Pteris</i>) Dr V. K. Rawat, Scientist-D (ca 54 species excluding 41 species of Genus <i>Pteris</i>) | 2018 – 2022 | Q1. Identification and documentation of specimens collected earlier. Q2. One Herbarium Consultation Tour to CNH and DD and one field tour to west and east Kameng. Identification and documentation of collected specimens Q3. One field tour to protected areas of Meghalaya (Nokrek Biosphere Reserve). Identification & documentation of collected specimens. One Herbarium Consultation Tour to ASSAM and BSA Q4. One field tour to protected areas of Assam (Kaziranga National Park and Dibru Saikhowa National Park). Identification and documentation of collected specimens Total: 3 Field Tours and 2 Herbarium Consultation Tours |
| 2. | Materials of the Flora of Arunachal Pradesh Vol. 4 ▪ Dr. M. R. Debta, Scientist C ▪ Dr. Krishna Chowlu, Scientist C ▪ Dr. U.K. Tiwari, Scientist C New Project | 2019 – 2020 | Complete the checklist along with updated nomenclature and distribution of all additional species reported from Arunachal Pradesh not included in earlier Floristic account of the state |

Note: In addition to above, Dr. Krishna Chowlu and Dr. U. K Tiwari are to submit the final reports of the projects namely, 'Red Listing of Orchids of Arunachal Pradesh as per IUCN criteria' and 'Flora of Eastern Kameng – Arunachal Pradesh' respectively by 31st July 2019

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 1 | 1 | 1 | 3 |
| Herbarium Consultation Tour | 0 | 1 | 1 | 0 | 2 |

EASTERN REGIONAL CENTRE, SHILLONG

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|--|
| 3. | Flora of Nagaland (Vol. 1 & Vol. 2). ▪ Dr. N. Odyuo, Scientist D ▪ Dr. D.K. Roy, Botanist ▪ Dr. David Lalsama Baite, Scientist B (under guidance of Dr. A. A. Mao) ● Vol. I: Ranunculaceae to Asteraceae (Approx. 1500 taxa) by March 2020. ● Vol. II & III: Campanulaceae to Ceratophyllaceae and Hydrocharitaceae to Poaceae (Approx. 1500 taxa) by March 2021. | 2016 – 2021 | Q1. One field tour to Phek district. Identification and documentation of collected specimens. Q2. One field tour to Wokha and Mokokchung district. Identification and documentation of collected specimens. Q3. Identification and documentation of collected specimens. Q4. Herbarium Consultation Tour to CNH for 10 working days. Total: 2 Field Tours and 1 Herbarium Consultation Tour |
| 4. | DNA barcoding and phylogenetic analysis of 20 selected endemic plant species of North East India and Phytochemical Screening of 11 medicinal plants ▪ Dr. Deepu Vijayan, Scientist C ▪ Dr. Dilip Kr. Roy, Botanist | 2017 – 2020 | Q1. Quantitative phytochemical analysis of selected medicinal plants using spectroscopy Q2. Collection tour to Dawki, Meghalaya. Quantitative phytochemical analysis of selected medicinal plants using UHPLC. Q3. DNA barcoding of selected endemic plant species Q4. Final report preparation Total: 1 Local Field Tour |
| 5. | Diversity and phylogeny of Aquatic fungi from North east India Dr. Ashish V. Prabhugaonkar, Scientist C | 2018 – 2020 | Q1. Molecular phylogenetic analysis of selected isolates. Q2. One field tour for collection and isolation of fungi from streams in Jaintia hills. Molecular phylogenetic analysis of selected isolates. Q3. One field tour for collection and isolation of fungi from streams in West Khasi hills and East Garo hills. Q4. Compilation of work and submission of final report. Total: 2 Field Tours |
| 6. | Micropropagation of RET Plants of North East India in ERC, Shillong ▪ Miss I. Chanu, Botanist ▪ Dr. Deepu Vijayan, Scientist B | On going | Development of culture protocols for <i>Ilex khasiana</i> , <i>Paphiopedilum hirsutissimum</i> and <i>Rhododendron coxianum</i> . Maintenance of existing culture in all Quarters. <u>Target:</u> Maintenance of existing culture in all Quarters. Hardening and introduction of the seedlings in the Garden. |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|----------|--|
| 7. | Ex-situ conservation & multiplication of endemic, rare, threatened and economically important plants of NE India at Experimental Botanic Garden, BSI, ERC, Barapani Dr. David, Scientist B and Shri L.R. Meitei, B.A. | On going | Recording of phenological data of plant species growing in EBG, Barapani and multiplication of RET species in all four quarters. One field tour in 3 rd Quarter to Khasi Hills, Meghalaya for collection of live plants of RET species. Total: 1 Field Tour |

Note: In addition to the above, Dr. N. Odyuo, Scientist D is to submit the final report of project namely 'Flora of Eastern Nagaland' by 31st July 2019. Besides, Dr. Chaya Deori, Scientist D is to submit the final report on 'Flora of West and South West Khasi Hills district of Meghalaya' by 31st July, 2019 positively.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 3 | 2 | 0 | 6 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 1 | 1 |

SIKKIM HIMALAYAN REGIONAL CENTRE, GANGTOKE

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|---|
| 8. | Taxonomic revision of <i>Impatiens</i> L. (Balsaminaceae) of Sikkim & Darjeeling Himalaya Dr. Rajib Gogoi, Scientist E | 2017 – 2020 | Q1. Identification and documentation of earlier collections Q2. One field tour to Darjeeling & West Sikkim for specific collection of <i>Impatiens</i> . Identification and documentation of specimens collected Q3. One field tour to North & East Sikkim for specific collection of <i>Impatiens</i> . Identification and documentation of specimens collected Q4. Finalisation and submission of report. Total: 2 Field Tours |

Note: In addition to the above, Dr. D. K. Agarwala, Scientist D is to submit the final report of the project namely 'Redlisting of Orchids of Eastern Himalayas as per IUCN criteria' by 31st July 2019 positively.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 1 | 1 | 0 | 2 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 0 | 0 |

CENTRAL REGIONAL CENTRE, ALLAHABAD

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 9. | SEM studies of the species belonging to family Acanthaceae available at BSA Dr. Nitisha Srivastava, Botanical Assistant | 2018 – 2021 | To examine seeds and epidermal features of 24 species (6 species in each quarter) belonging to the family Acanthaceae available in BSA |
| 10. | Revision of Genus <i>Adiantum</i> L. (Adiantaceae) in India (28 species) Dr. Brijesh Kumar, Botanist | 2016 – 2020 | Q1. Identification, dissection and preparation of Illustration. Q2. One Herbarium Consultation tour to PAN, PUN, DD and BSD herbarium for critical study of specimens. Q3. One Herbarium Consultation tour to LWG herbarium for critical study of specimens. Q4. Finalisation and submission of final report. Total: 2 Herbarium Consultation Tours |

Note: In addition to the above, Dr. G. P. Sinha, Scientist E is to submit the final report of the projects namely 'Floristic Diversity of Kishanpur WLS' and 'Floristic Diversity of Alwar Wetland' by 31st July 2019. Besides, Dr. A. K. Verma is to submit the final report of the project namely 'Cyto-taxonomical studies of selected taxa of India sub-tribe Cassinae' by 31st July 2019 positively.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 0 | 0 | 0 | 0 |
| Herbarium Consultation Tour | 0 | 1 | 1 | 0 | 2 |

NORTHERN REGIONAL CENTRE, DEHRADUN

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|--|
| 11. | Flora of Sechu Tuan Nala Wildlife Sanctuary, Chamba District, Himachal Pradesh Dr. Puneet Kumar, Scientist C | 2017 – 2020 | Q1. Identification and documentation of specimens collected from earlier field tours. Q2. One field tour to the under explored areas of the sanctuary. Identification of collected specimens. Q3. Identification and documentation of specimens collected. Q4. Finalization and submission of manuscript. Total: 1 Field Tour |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|---|
| 12. | Documentation and database of Alien Invasive species of Himachal Pradesh (North Western Himalaya) Dr. K. S. Dogra, Scientist D | 2017 – 2020 | Q1. Listing of species from literature and Herbarium data Q2. Survey and collection tour to different areas of NW Himalayas to collect alien invasive species. Q3. Identification of invasive species. Preparation of database. Q4. Finalization and submission of manuscript. Total: 1 Field Tour |
| 13. | Flora of Himachal Pradesh Volume I | | |
| | Ranunculaceae – Papavaraceae (Estt. Spp.: 161) ▪ Dr S.K. Singh, Scientist E* ▪ Sri P.K. Deroliya, Botanical Assistant (*Earlier Dr Kumar Ambrish) | 2017 – 2020 | Listing of species from published literature and herbarium and documentation of 53 species. One herbarium consultation tour to RRLH, PLP, Herbarium of Jammu University, Jammu, Herbarium of Himalayan Forest Research Institute, Shimla in Q3. Finalization and submission of manuscript. Total: 1 Herbarium Consultation Tour |
| | Geraniaceae – Moringaceae (Estt. Spp.: 155) Sri Sachin Sharma, Botanical Assistant | 2017 – 2020 | Listing of species from published literature and herbarium and documentation of 40 species. Finalization and submission of manuscript. |
| | Portulacaceae – Zygophyllaceae (Estt. Spp.: 70) Sri Sameer Patil, Botanist* (*Earlier Dr. M.R. Debta) | 2017 – 2020 | Listing of species from published literature as well as from Herbarium and documentation of 40 species. Finalization and submission of manuscript. |
| | Brassicaceae – Caryophyllaceae (Estt. Spp.: 148) Dr. K.S. Dogra, Scientist D | 2017 – 2020 | Listing of species from published literature as well as from Herbarium and documentation of remaining 48 species. Finalization and submission of manuscript. |
| | Fumariaceae; Capparaceae – Polygalaceae (Estt. Spp.: 50) Dr. Puneet Kumar, Scientist C | 2017 – 2020 | Listing of species from published literature as well as from Herbarium and documentation of remaining 11 species. Finalization and submission of manuscript. |
| | Flora of Himachal Pradesh Volume I Introduction Part ▪ Dr. S. K. Singh, Scientist E, ▪ Dr. Puneet Kumar, Scientist C, ▪ Dr. K. S. Dogra, Scientist C ▪ Dr. P. K. Deroliya, Botanical Assistant | 2019 – 2020 | Literature survey, data collection and analysis, selection of photographs. Writing, finalization and submission of final report |
| 14. | Pictorial Flora of Pteridophytes of Uttarakhand Dr. B. S. Kholia, Scientist D | 2018 – 2021 | Q1. One survey and collection tour to lower elevation of Kumaon and identification of collected species. Q2. One survey and collection tour to middle elevation of Garhwal and identification of collected species. Q3. One survey and collection tour to higher elevation of Garhwal and identification of collected species. One herbarium consultation tour to PUN, PAN & DD and identification and work out identified species. Q4. One survey and collection tour to lower elevation of Uttarkashi. Identification & documentation of specimens. Total: 4 Field Tours and 1 Herbarium Consultation Tour |
| 15. | Micropropagation of endangered species of <i>Tricholepis roylei</i>, <i>Jasminum parkeri</i> and <i>Eulophia dabia</i> (Orchidaceae). ▪ Dr. Giriraj Singh, Scientist C ▪ Dr. Bhavna Joshi, Botanist | 2018 – 2020 | Screening of plant growth regulators for the multiple shoot induction and proliferation of roots. Hardening and acclimatization of <i>in vitro</i> regenerated plantlets in the green house. Shifting of the acclimatized plants in the field |
| 16. | Ex-situ conservation of endemic threatened and economic plant species in the associated garden of NRC and documentation of monthly data on flowering and fruiting ▪ Dr. S. K. Singh, Scientist E ▪ Dr. B.S. Kholia, Scientist D ▪ Dr. K.S. Dogra, Scientist C ▪ Sri P.K. Deroliya, Botanical Assistant ▪ Shri Sachin Sharma, Botanical Assistant | On going | Tours to Biodiversity rich areas of Uttarakhand for collection of threatened and economically important plants species. <i>Maintenance</i> of germplasm collected. Documentation of data on phenology of species growing in the botanic garden. Target for collection of economic and threatened species: 10 |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 3 | 1 | 1 | 6 |
| Herbarium Consultation Tour | 0 | 0 | 2 | 0 | 2 |

ARID ZONE REGIONAL CENTRE, JODHPUR

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 | | | |
|--|---|-------------|--|-----------|-----------|--------------|
| 17. | Flora of Jambhughoda Wildlife Sanctuary, Gujarat (Area 130.38 sq. km.) Dr. S.L. Meena, Scientist D (under order of transfer to BSI – Hqrs.) | 2017 – 2020 | Q1. Identification, inventorisation and documentation of specimens collected in previous tours. One field tour to the under explored areas of the sanctuary Q2. Identification, inventorisation and documentation of specimens collected in previous tours. One Herb. Cons. tour to Dept. of Biosciences, M.S. University, Vadodara Q3. Preparation of the report. Q4. Finalisation and submission of the report. Total: 1 Field tour and 1 Herbarium Consultation Tour | | | |
| 18. | Flora of Navsari District, Gujarat (Area 2,211 Sq. Km.) ▪ Dr. Ramesh Kumar, Scientist D (Under order of transfer to AJCBIBG) ▪ Sri Vinod Maina, Scientist D | 2015 – 2020 | Identification and documentation of Herbarium specimens. Finalization and submission of final report. | | | |
| 19. | Flora of Todgarh-Raoli Wildlife Sanctuary, Rajasthan Dr. C.S. Purohit, Scientist C (Transferred to ANRC) | 2015 – 2020 | Identification of unidentified herbarium specimens. Finalization and submission of manuscript in December, 2019. | | | |
| 20. | Vegetation characterization and floristic studies in Bassi Wildlife Sanctuary, Rajasthan using remote sensing and GIS (Area: 288 km ²) Dr. P. Hari Krishna, Botanical Assistant | 2017 – 2020 | Q1. Identification and inventorisation of specimens collected in previous tours Q2. Identification, inventorisation and one HC tour to M.L.S. University Udaipur and Govt. College, Bhilwara. Q3. Preparation of the report. Q4. Finalisation and submission of the report. Total: 1 Herbarium Consultation Tour | | | |
| 21. | GIS mapping of Endemic, Endangered and Threatened plants species of Rajasthan ▪ Dr. P. Hari Krishna, Botanical Asstt. ▪ Dr S. Misra, Scientist C ▪ Shri Vinod Maina, Scientist D | 2017 – 2020 | Finalisation and submission of the report. | | | |
| 22. | Ex-situ conservation of RET and economically important species of the Arid region in the experimental Garden of AZRC and documentation of phonological data on flowering and fruiting ▪ Dr. S. Misra, Scientist C ▪ Dr V. Maina, Scientist D | On going | Saplings of 10 RET and economically important species to be collected during each of the two field tours (to be conducted in the 2 nd and 3 rd quarter of 2019 – 20) for <i>Ex-situ</i> conservation in the Experimental Garden of AZRC and documentation of phenological data on flowering & fruiting. Total: 2 Field Tours | | | |
| Nature of Tour | | Q1 | Q2 | Q3 | Q4 | Total |
| Field Tours/ ex situ conservation tour | | 1 | 1 | 1 | 0 | 3 |
| Herbarium Consultation Tour | | 0 | 2 | 0 | 0 | 2 |

DECCAN REGIONAL CENTRE, HYDERABAD

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------------------------------|--|
| 23. | Flora of Manjeera Wild Life Sanctuary, Telangana (Area: 20 km ²) Dr. L. Rasingam, Scientist D | 2017 – 2021 (Extended upto 2022) | Q1. Identification and inventorisation of specimens collected in earlier tours. Q2. One field tour in August to the unexplored areas of the sanctuary. Identification of collected specimens. Q3. Two field tours in October and December to the unexplored areas of the sanctuary. Identification of collected specimens. Q4. One Herbarium Consultation Tour to CNH for consultation of literature and study of critical specimens collected in the earlier tours. Total: 3 Field Tours and 1 Herbarium Consultation Tour |
| 24. | Grasses of Telangana State India Mr. S. Nagaraju, Botanical Assistant | 2017 – 2021 (Extended upto 2022) | Q1. Identification and inventorisation of specimens collected in earlier tours. Q2. One field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Two Herbarium Consultation tour to SKU, KU, HY Q3. Two field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Q4. One field tour to the unexplored areas of the sanctuary. Identification of collected specimens. Total: 4 Field Tours and 2 Herbarium Consultation Tours |

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------------------------------|--|
| 25. | Flora of Kinnerasani Wild Life Sanctuary, Telangana (Area: 635.40 km²) Sri J. Swamy, Botanical Assistant | 2017 – 2021 (Extended upto 2022) | Q1. Identification and inventory of specimens collected in earlier tours. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. Q2. One herbarium consultation tour to Osmania University, Hyderabad, & Kakatiya University, Warangal for critical study of collected specimens Q3. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. Q4. One field tour to the unexplored areas of the sanctuary Identification of collected specimens. One herbarium consultation tour to MH Total: 4 Field Tours and 2 Herbarium Consultation Tour |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 3 | 5 | 2 | 11 |
| Herbarium Consultation Tour | 0 | 3 | 0 | 2 | 5 |

WESTERN REGIONAL CENTRE, PUNE

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|---|
| 26. | Taxonomic studies of Micro-fungi of Sanjay Gandhi National Park, Maharashtra along with its 10 % peripheral area (Area: 103.84 km²) Dr. Rashmi Dubey, Scientist E | 2016 – 2020 | Q1. Isolation, identification and characterisation of fungal species collected from different substrates Q2. Isolation, identification and characterisation of fungal species collected from different substrates & statistical analysis. Q3. One field Tour to the sanctuary for collection of micro-fungi. Isolation, identification and characterisation of fungal species collected from different substrates & statistical analysis. Q4. Preparation and submission of final report Total: 1 Field Tour |
| 27. | Floristic Diversity of Wan Wildlife Sanctuary Dr. Priyanka Ingle, Scientist B | 2016 – 2020 | Finalisation and submission of final report |
| 28. | Flora of Pushpagiri WLS, Karnataka Sri Samir Patil, Botanist (Transferred to NRC, Dehradun) Dr. P. Lakshminarasimhan, Scientist E | 2016 – 2020 | Critical identification of ca. 45 species. One Herbarium Consultation Tour to be conducted by Sri Patil to BSI, Pune in 2 nd quarter for processing of collected specimens. Ecological data analysis of shola grasslands. Preparation and submission of final report Total: 1 Herbarium Consultation Tour |
| 29. | Pteridophytic Flora of Pushpagiri Wildlife Sanctuary, Karnataka with 10% Periphery ▪ Mr. D. Jesubalan, Bot. Assistant ▪ Dr. A. Benniamin, Scientist E (transferred to BSI – Hqrs.) | 2016 – 2020 | Q1. Identification and inventory of specimens collected earlier. Q2. One field tour to be undertaken to the Pushpagiri Wildlife Sanctuary. One Herb. Consultation tour to be undertaken to CAL. Q3. One Herbarium Consultation Tour to MH for critical study of collected specimens. Q4. Preparation and submission of final report. Total: 1 Field Tours and 2 Herbarium Consultation Tour |
| 30. | Seed morphology and cyto taxonomy of some selected Orchids of Northern Western Ghats Mrs. A.M. Neelima, Botanical Assistant | 2017 – 2020 | Q1. Identification of the remaining species. Short tours to cover the gap in collection, microscopic and SEM studies of the remaining species, micro-morphometry of seeds to be carried out for analysis. Q2. SEM and Light microscopy of the collected specimens. Interpretation of the data. Short field tours to collect terrestrial orchids, micro-morphometry of seeds to be carried out for analysis. Q3. SEM and Light microscopy of the collected specimens. Interpretation of the data. Short field tours to collect specimen, micro-morphometry of seeds to be carried out for analysis. Q4. Interpretation of the data generated by SEM and Light microscopic studies. compilation of data and submission of final report |

Note: In addition to the above, Dr. Sukumar Bhakta, Botanical Assistant is to submit the final report of the project namely 'Biodiversity Assessment of Micro-Algae from thermal springs of Maharashtra' by 31.07.2019. Besides, Dr. C. R. Jadhav, Botanist is to submit the final report of Flora of Karnataka Volume I by 31.07.2019

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 1 | 1 | 0 | 2 |
| Herbarium Consultation Tour | 0 | 2 | 1 | 0 | 3 |

SOUTHERN REGIONAL CENTRE, COIMBATORE

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 31. | Flora of Kodaikanal Wildlife Sanctuary, Tamil Nadu (Area: 736.9 km²) <ul style="list-style-type: none"> ▪ Dr. K. Althaf Ahamed Kabeer, Scientist D (transferred to CBL) ▪ Mr. A. Ravi Kiran, Botanical Assistant (deployed to DRC, Hyderabad) | 2015 – 2020 | The executing officials have been transferred as well as deployed to other offices. However, Sri Ravi Kiran will conduct one tour to the unexplored areas of the sanctuary in Q2. He will identify all the specimens by sitting there in SRC and then he will return back to DRC to prepare the final report in consultation with Dr. Altaf for submission by March 2020. Total: 1 Field Tour |
| 32. | Flora of Kanniyakumari Wildlife Sanctuary, Tamil Nadu (Area: 402.39 sq. km). <ul style="list-style-type: none"> ▪ Dr. Sujana. K. A., Scientist D* (Earlier Dr. J. H. Franklin) ▪ Shri. Rakesh G Vadhyar, Bot. Asstt. | 2015 – 2020 | Q1. Identification & documentation of specimens collected earlier. Q2. One field survey to area in first week of July 2019. Identification and documentation of specimens collected. Q3. One field survey to the area in first week of November 2019. Identification & documentation of specimens collected. Q4. One field survey to the area in first week of February 2020. Identification and documentation of specimens collected. Finalisation and submission of final report Total: 3 Field Tours |
| 33. | Floristic Assessment of Megamalai Wildlife Sanctuary, Tamil Nadu. (Area: 269 sq. km.) <ul style="list-style-type: none"> ▪ Dr. C. Murugan, Scientist E ▪ Dr. S. Arumugam Bot. Assistant | 2016 – 2020 | Q1. Identification and documentation of earlier collection. One survey to unexplored area. Q2. Identification and documentation of earlier collection. One survey to unexplored area. Q3. Identification and documentation of earlier collection. One survey to unexplored area. Q4. Identification and documentation of specimens collected earlier. Compilation and submission of report. Total: 3 Field Tours |
| 34. | Cyperaceae of Tamil Nadu <ul style="list-style-type: none"> ▪ Dr. C. Murugan, Scientist E ▪ Dr. S. Arumugam, Bot. Assistant | 2015 – 2020 | Identification and documentation of all the specimens collected in earlier tours. One field tour to be conducted to the unexplored study areas in Q3. Identification and documentation of collected specimens. Compilation and submission of final report Total:1 Field Tour |
| 35. | Assessment of Plant diversity in Cauvery North Wildlife Sanctuary, Tamil Nadu (Area: 504.33 sq. km.) <ul style="list-style-type: none"> ▪ Dr. R. Manikandan, Scientist D ▪ Smt. Mehala Devi, R., Sr. Pres. Asst. | 2017 – 2021 | One field tour in each quarter to the unexplored and underexplored areas of the sanctuary. Identification and documentation of collected specimens. Total: 4 Field Tours |
| 36. | Marine Macro Algal flora of India <ul style="list-style-type: none"> ▪ Dr. M. Palanisamy, Scientist D ▪ Dr. S.K. Yadav, Botanist* (* Transferred to BSI, Hqrs., Kolkata) <p align="center"><i>New Project</i></p> | 2019 – 2022 | Q1. Literature survey and Updating of data Q2. Updating of data and documentation from previous collections available at MH Q3. Updating of data from previous collections available at MH (by Dr. Palanisamy) and at CNH (by Dr. Sudhir Yadav). One field survey to Gulf of Mannar BR, Tamil Nadu. Q4. Updating of data from previous collections available at MH (by Dr. Palanisamy) and at CNH (by Dr. Sudhir Yadav). One field survey to Gujarat coast. Total: 2 Field Tours |
| 37. | Ex-situ conservation of endemic endangered and threatened plants of the region and recording of phenology of species in the NOEG, Yercaud <ul style="list-style-type: none"> ▪ Dr. S. Kaliamoorthy, Scientist D ▪ Dr. T. S. Saravanan, Bot. Assistant | On going | Multiplication and maintenance of existing collections. One field tour to each in Q2 and in Q3 to Wayanad district, Kerala for collection of EET plants. Total:2 Field Tours |
| 38. | Ex-situ conservation of Endemic tree species of the region in NOEG, Yercaud <ul style="list-style-type: none"> ▪ Dr. M.Y. Kamble, Scientist D ▪ Shri. B. S. Elango, Bot. Assistant | On going | Multiplication and maintenance of existing collections. One field tour to Agasthiyalai Biosphere Reserve and one herbarium consultation tour to TBGRI, Thiruvanthapuram in Q1. Another field tour to Agasthiyalai Biosphere Reserve in Q3. Total: 2 Field Tours and 1 Herbarium Consultation Tour |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 3 | 5 | 7 | 3 | 18 |
| Herbarium Consultation Tour | 1 | 0 | 0 | 0 | 1 |

ANDAMAN & NICOBAR REGIONAL CENTRE, PORT BLAIR

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 39. | Ex-situ conservation of RET species (Bamboos, Palms, Zingibers, endemic tree species) of Andaman & Nicobar Islands at Dhanikhari Exp. Garden cum Arboretum and raise nursery. <ul style="list-style-type: none"> ▪ Dr. Chandan Singh Purohit, Scientist C ▪ Dr. Vivek C. P., Botanical Assistant New Project | 2019 – 2022 | Q1. Literature survey, Herbarium Consultation. Multiplication and maintenance of previous collections. Q2. One field tour to be conducted at North Andaman. Multiplication and maintenance of previous collections. Q3. Literature survey, Herbarium Consultation. Multiplication and maintenance of previous collections. Q4. One field tour to be conducted at Great Nicobar Island. Multiplication and maintenance of previous collections. Total: 2 Field Tours |
| 40. | Revision of the Lichen family Pyrenulaceae in India Dr. T.A.M. Jagadesh Ram, Scientist D | 2017 – 2022 | Morphological, anatomical, chemical characterization and identification of earlier collections. One field tour to Kerala and Tamil Nadu in Q4. Total: 1 Field Tour |
| 41. | Revision of Gymnosperms of Andaman & Nicobar Islands (Earlier Project: Revision of the family Cycadaceae in Andaman and Nicobar Islands) Dr. Lal Ji Singh, Scientist E Sri Gautam Anuj Ekka, Pres. Asstt. | 2018 – 2020 | Q1. Literature survey and consultation of herbarium at PBL. One local field tour to be undertaken to South Andaman Islands. Q2. One field tour to be undertaken to Middle Andaman Islands. Q3. One field tour to be undertaken to North Andaman Islands. One herbarium and library consultation tour to be undertaken at CNH, Howrah. Q4. Finalization and submission of manuscript Total: 2 Field Tours and 1 Herbarium Consultation Tour |
| 42. | Phenological survey of tree Species of Dhanikhari Experimental Garden-cum-Arboretum, Nayashahar with special emphasis on campus tree. Dr. Lal Ji Singh, Scientist E Sri B. C. Dey, Botanical Assistant | On going | Maintenance and recording of flowering and fruiting of tree species of Dhanikhari Experimental Garden (DEGCA), Nayashahar, South Andaman. |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 2 | 1 | 2 | 5 |
| Herbarium Consultation Tour | 0 | 0 | 1 | 0 | 1 |

AJC BOSE INDIAN BOTANIC GARDEN, HOWRAH

| Sr. No. | Name of the Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------------------------------|---|
| 43. | Enrichment of medicinal plant section (Charak Udyan) of AJC Bose Indian Botanic Garden through survey, collection and introduction of medicinal plants Dr. S. P. Panda, Scientist C | 2015 – 2018 (Extended upto 2020) | Two ex-situ conservation Tours in Q2 and Q4 to Andhra Pradesh and North Bengal respectively to collect 20 medicinal plants from each tour for introduction in the medicinal plant section (Charak Udyan) of AJC Bose IBG. Total 02 Ex-situ conservation Tours |
| 44. | Collection, documentation & ex situ conservation of Aromatic plants of India <ul style="list-style-type: none"> ▪ Dr. M.U. Sharief, Scientist E ▪ Dr. B. K. Singh, Botanical Assistant | 2017 – 2020 | Two tours in Q3 and Q4 to Jammu and Andaman & Nicobar Islands respectively to collect 15 aromatic plants from each tour for <i>ex-situ</i> conservation. Total 02 Ex-situ conservation Tours |
| 45. | GIS phyto-mapping & digitization of shrubs and trees in AJC Bose Indian Botanic Garden <ul style="list-style-type: none"> ▪ Dr. M.U. Sharief, Scientist E ▪ Dr. C. M. Sabhpathy, Botanist ▪ Dr. B. K. Singh, Botanical Assistant | On going | <ul style="list-style-type: none"> ▪ Number labelling and GPS reading of the Trees and Shrubs of remaining 15 Divisions of AJCBIBG. ▪ Labelling the Scientific names to the important trees and shrubs of AJCBIBG. ▪ Updating and compilation of latest field data |

Note: In addition to above, Dr. B. K. Singh, Botanical Assistant is to submit the final reports of the project namely 'Herbaceous Flora of AJCB IBG (Dicot and Monocot excluding Cyperaceae and Poaceae)' and 'Introduction of Mangroves associated plants in AJCB IBG' by 31st July 2019. Apart from that, Dr. S. S. Hameed, Scientist D is to submit the final project report of the project namely 'A re-assessment and revalidation of Phoenix loureiroi and its variants in India' by 31st July 2019. Besides, Smt. Nita Sarkar, Botanist is to submit the final report of the project namely 'Documentation of woody climbers of AJCB IBG' by 31st July 2019.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 1 | 2 | 1 | 4 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 0 | 0 |

CENTRAL BOTANICAL LABORATORY, HOWRAH

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|--|
| 46. | Ethnobotanical study of some tribal populated districts of Bihar <u>Team I</u> <ul style="list-style-type: none"> ▪ Dr. Monika Mishra, Botanical Assistant ▪ Dr. P. A. Dhole, Botanical Assistant <u>Team II</u> <ul style="list-style-type: none"> ▪ Dr. K. Althaf Kabeer, Scientist D ▪ Sri A. C. Halder, Botanist ▪ Sri R. Saravanan, Botanist | 2018 – 2022 | Q1. Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Aurangabad (Area: 3305 Sq Km; Tribal Population: 1,640) and Nawada (Area: 2494 Sq Km; Tribal Population 2,158) by Team II. Q2. Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Kishanganj (Area: 1884 Sq Km; Tribal Population 47,116) and Araria (Area: 2830 Sq Km; Tribal Population 29,423) by Team I along with Sri R. Sarvanan. Q3. Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Purnia (Area: 3229 Sq Km; Tribal Population 1,11,197) and Kathiar (Area: 3009 Sq Km; Tribal Population 1,40,418) by Team-II. Q4. Processing and identification of herbarium specimens. Documentation and compilation of data collected in previous tours. One field tour to Gaya (Area: 4976 Sq Km; Tribal Population 2,945) and Nalanda (Area: 2367 Sq Km; Tribal Population 970) by Team I along with Sri R. Sarvanan. Total: 4 Field Tours |
| 47. | Chromosome count of Genus <i>Impatiens</i> of Sikkim / Darjeeling Dr. Monika Mishra, Botanical Assistant | 2018 – 2021 | Chromosome studies of nine species of <i>Impatiens</i> to be done in the year 2019 – 20. |
| 48. | Study of Micro-Algae and monitoring of water quality of all lakes of AJCB IBG Dr. (Mrs.) Pratibha Gupta, Scientist E <i>New Project</i> | 2019 – 2020 | 4 – 5 samples to be collected from each lake of the garden per month to study the periodicity, succession, distribution and monitoring of micro-algae. |

Note: In addition the above, Dr. Pratibha Gupta is to submit the final report of the project namely 'Study of micro-algae and monitoring of water quality of Lerum lake of AJCB IBG by 31st July, 2019.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 1 | 1 | 1 | 4 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 0 | 0 |

INDUSTRIAL SECTION INDIA MUSEUM, KOLKATA

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|--|
| 49. | Collection of Economic Plant materials for enrichment & replacement of the Botanical Gallery Dr M. Bhaumik, Scientist E; Dr. Geeta Chaudhury, Botanist and Sri S.K. Sharma, Sr. Preservation Asstt. | 2019 – 2020 | One tour to Rajamundi, Andhra Pradesh in Q3 and one tour to Dinhata, West Bengal in Q4 for collecting Tobacco and others samples Total: 2 Field Tours |
| 50. | Interpretation of Roxburgh Icones: Family: Orchidaceae Dr. M. Bhaumik, Sci. E & Dr. (Ms.) K. Pagag, Botanist | 2018 – 2020 | Updation of nomenclature and description to be completed and final report to be submitted by March 2020 |
| 51. | Studies on natural dye from some selected plants of West Bengal for dyeing cotton fabrics <ul style="list-style-type: none"> ▪ Dr. M. Bhaumik, Scientist E ▪ Dr. (Mrs.) S. Dutta, Bot. Asstt. <i>New Project</i> | 2019 – 2020 | 5 plants to be worked out with 4 mordents (tentative taxa: <i>Cuscuta reflexa</i> ; <i>Rivina humilis</i> ; <i>Wedelia chinensis</i> ; <i>Lagerstroemia speciosa</i> ; <i>Dimocarpus longan</i> . 20 dyed cloth samples to be prepared during this period. |
| 52. | Listing & Identification of 8000 Dicot herbarium specimens at BSIS <ul style="list-style-type: none"> ▪ Dr. Geeta Chaudhury, Botanist ▪ Sri S. K. Sharma, Sr. Preservation Asstt. | On going | All the documentation work to be completed. Final report to be submitted in September 2019. |

Note: In addition the above, Dr. Kangan Pagag is to submit the final report of the project namely 'Interpretation of Roxburgh's Icon – Pteridophytes' by 31st July 2019)

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 0 | 1 | 1 | 2 |

CRYPTOGAMIC DIVISION, HEAD QUARTERS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|---|
| 53. | Studies on algal diversity in Hot Spring of Rajgir and Munger. Dr. R.K. Gupta, Scientist D | 2017 – 2020 | One field tour each in Q2 and Q3 to Rajgir and Munger hot springs. Study of the collected samples under microscope with image facility for taxonomic description along with microphotography. Diatoms samples to be studied under SEM for taxonomic description along with microphotography. Total: 2 Field Tours |
| 54. | Liverworts and Hornworts Flora of Darjeeling District, West Bengal. Dr. Monalisa Dey, Scientist C | 2016 – 2021 | Q1. Identification, illustration, micro-photography of specimens collected earlier. Q2. Continuation of study, identification, illustration, microphotography and description of previously collected specimens. Q3. One field tour will be undertaken to Darjeeling district, West Bengal. Processing, preservation of collected specimens Q4. Continuation of study, identification, illustration, microphotography and description of previously collected specimens. One field tour will be undertaken to Darjeeling district, West Bengal. Total: 2 Field Tours |
| 55. | Bryo-flora of Jharkhand Dr. D. Singh, Scientist D | 2018 – 2022 | Q1. Identification, camera lucida illustrations, microphotography of all the specimens collected earlier. Q2. Identification, camera lucida illustrations, microphotography of all the specimens collected earlier. Q3. One field tour to Godda, Sahibganj, Dumka districts including Rajmahal Hills (ca. 400 sq. km) and study of collected specimens. Q4. One field tour to Palamu, Lohardaga, Gumla districts including (ca. 600 sq. km) and study of the collected specimens. Total: 2 Field Tours |
| 56. | Wood rotting fungi of Valmiki National Park Dr. Manoj Hembrom, Botanist | 2018 – 2021 | <ul style="list-style-type: none"> ▪ Two field tours in Q2 and one field tour in Q3 to the area for collection of specimens. Macroscopic and microscopic characterisation, description, drawing and phylogenetic analysis of collected specimens to be done. ▪ Two Herbarium consultation tour to be conducted to Punjabi University Patiala and Forest Research Institute Dehradun in Q4 Total: 3 Field Tours 2 Herbarium Consultation Tour |
| 57. | Pteridophytes of Goa *Dr. A. Benniamin, Scientist E (*Transferred from WRC) | 2018 – 2020 | Two Field Tours to be undertaken in unexplored areas of Goa for collection of Pteridophytes in Q2 and Q3. Cytological studies to be done for the collected species of Pteridophytes. Spore Morphology for all the species is also to be done. Distribution Map to be prepared for all the species using QGIS Software. Preparation and submission of final report Total: 2 Field Tours |
| 58. | Exploration of Caterpillar fungi in Himalaya: Morpho-taxonomy, Molecular phylogeny, Chemical & nutraceutical properties Dr. Kanad Das, Scientist E Dr. M. Hembrom, Botanist Sri Arvind Parihar, Bot. Asstt <i>New Project</i> | 2019 – 2021 | Two Field Tours to be undertaken to Kumaon Himalaya (Last district of India: Pithoragarh) and to Sikkim for collection of Caterpillar fungi in Q1 and Q2. Total: 2 Field Tours |

Note: In addition to above, Dr. Kanad Das is to submit the final report of the project namely 'Study of wild mushroom of east and south Sikkim' by 31.07.2019

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 4 | 5 | 3 | 13 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 2 | 2 |

PLANT CHEMISTRY DIVISION, HEAD QUARTERS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|--|-------------|---|
| 59. | Anti-nutritional Properties (oxalate, phytate, saponin and tannin content), Genotoxicity, DNA damage Preventive Activity, HPLC Studies for Vitamin and Phenolic Content of Wild Edible Plant of NE India Dr. Tapan Seal, Scientist D | 2018 – 2022 | 45 Wild Edible Plants of NE India to be studied. One field tour in Q4 to be undertaken to N.E. India for collection of wild edible plants. Total: 1 Field Tour |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 0 | 0 | 1 | 1 |

CENTRAL NATIONAL HERBARIUM, HOWRAH

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019 – 20 |
|---------|---|-------------|--|
| 60. | Angiospermic flora of Neora Valley National Park, Darjeeling, WB. (Area 159 Sq. Km.) <ul style="list-style-type: none"> ▪ Dr. Vinay Ranjan, Scientist D ▪ Dr. Gopal Krishna, Botanical Assistant ▪ Dr. Anant Kumar, Botanical Assistant | 2017 – 2021 | Identification and description of earlier collections. One Field tour to the unexplored areas of national park in each quarter in Q1, Q2, Q3 and Q4 for plant collections. Identification and description of collections. Total: 4 Field tours |
| 61. | Revision of the genus <i>Gastrochilus</i> (Orchidaceae) in India Dr. Avishek Bhattacharjee, Scientist C | 2018 – 2021 | Identification and description of earlier collections. One Field cum herbarium consultation tour to Western Himalaya in Q2. One Field-cum-herbarium consultation tour to Southern India in Q3. Total: 2 Field tours and 2 Herbarium Consultation Tours |

Note: In addition to the above, Sri P. P. Ghoshal, Botanist is to submit the final report of the project namely 'Flora of Betla National Park, Jharkhand by 31st July, 2019.

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 1 | 2 | 1 | 2 | 6 |
| Herbarium Consultation Tour | 0 | 1 | 1 | 0 | 2 |

PUBLICATION DIVISION, HEADQUARTERS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019-20 |
|---------|--|-------------|---|
| 62. | Interpretations of Roxburgh Icons in respect to current nomenclature: Families Bignoniaceae and Clusiaceae <ul style="list-style-type: none"> ▪ Dr. Debasmita Dutta Pramanik, Sci. C ▪ Dr. S. S. Dash, Scientist E | 2018 – 2020 | Listing of taxa of the families Bignoniaceae and Clusiaceae from authentic and current literature. Listing of taxa from Roxburgh icons. Study of herbarium specimens deposited in CAL and BSIS. Interpretation of remaining species of families Bignoniaceae and Clusiaceae. Submission of final report |
| 63. | Flora of Eagle Nest Wild Life Sanctuary and its adjacent regions, West Kameng District, Arunachal Pradesh <ul style="list-style-type: none"> ▪ Sri Sanjay Kumar, Botanist ▪ Dr. S. S. Dash, Scientist E | 2018 – 2022 | Q1. Processing and identification of Herbarium specimens collected earlier Q2. One field tour to the west Kameng district for 20-25 days for collection of plant specimens. Processing and identification of collected specimens. Q3. One field tour to the west Kameng district for 20-25 days for collection of plant specimens. Processing and identification of collected specimens. Q4. Processing, identification and inventorisation of collected specimens. Total: 2 Field Tours |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 1 | 1 | 0 | 2 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 0 | 0 |

TECHNICAL DIVISION, HEADQUARTERS

| Sl. No. | Name of The Project | Period | Quantifiable deliverables for 2019-20 |
|---------|---|-------------|---|
| 64. | Marine Macro Algal Flora of West Bengal Coast, India Dr. S. K. Yadav, Botanist Sri Kaju Majumdar, Pres. Asstt. <i>New Project</i> | 2019 – 2022 | Q1. Collection of literature pertaining to study area Q2. Collection of literature pertaining to study area Q3. One field tour to the coastal areas of West Bengal. Processing and identification of collected specimens. Q4. Processing, identification and inventorisation of collected specimens. One Herbarium Consultation Tour to CMFRI, Vishakhapatnam and Andhra University (Dept. of Marine Living Resources) Total: 1 Field Tour and 1 Herbarium Consultation tour |

| Nature of Tour | Q1 | Q2 | Q3 | Q4 | Total |
|--|----|----|----|----|-------|
| Field Tours/ ex situ conservation tour | 0 | 0 | 1 | 0 | 1 |
| Herbarium Consultation Tour | 0 | 0 | 0 | 1 | 1 |

SUMMARY OF TOURS

| Regional Centre / Unit | Field Tour / <i>Ex situ</i> Conservation tour | | | | Herbarium Consultation Tour / Library Consultation Tour | | | |
|------------------------|--|----|----|----|--|----|----|----|
| | Q1 | Q2 | Q3 | Q4 | Q1 | Q2 | Q3 | Q4 |
| APRC | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 |
| ERC | 1 | 3 | 2 | 0 | 0 | 0 | 0 | 1 |
| SHRC | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 |
| CRC | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 |
| NRC | 1 | 3 | 1 | 1 | 0 | 0 | 2 | 0 |
| AZRC | 1 | 1 | 1 | 0 | 0 | 2 | 0 | 0 |
| DRC | 1 | 3 | 5 | 2 | 0 | 3 | 0 | 2 |
| WRC | 0 | 1 | 1 | 0 | 0 | 2 | 1 | 0 |
| SRC | 3 | 5 | 7 | 3 | 1 | 0 | 0 | 0 |
| ANRC | 0 | 2 | 1 | 2 | 0 | 0 | 1 | 0 |
| AJCBIBG | 0 | 1 | 2 | 1 | 0 | 0 | 0 | 0 |
| CBL | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 |
| ISIM | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 |
| CRYPTOGAMIC | 1 | 4 | 5 | 3 | 0 | 0 | 0 | 2 |
| PLANT CHEMISTRY | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 |
| CNH | 1 | 2 | 1 | 2 | 0 | 1 | 1 | 0 |
| PUBLICATION | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 |
| TECHNICAL | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 |
| TOTAL | 10 | 29 | 32 | 18 | 1 | 11 | 8 | 6 |
| | 89 | | | | 26 | | | |

| | |
|--|----|
| No. of New Projects starting in 2019 – 20: | 7 |
| No. of projects whose tenure are completing in March 2020: | 34 |
| No. of on going projects: | 9 |
| No. of projects continuing beyond March 2020 (excluding 7 new projects): | 14 |
| Total no. of projects: | 64 |