

Factsheet of 2020-21 (as on 31st March 2021) on Activities of ENVIS-RP-NBRI on "Plants and Pollution"

Government of India
Ministry of Environment, Forest & Climate Change
(EI Division)

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Factsheet of 2020-21 (as on 31st March 2021) on Activities of ENVIS Resource Partner-NBRI

1. Name of Host Organization:	CSIR-National Botanical Research Institute (NBRI), Lucknow					
2. Assigned Subject Area:	Plants and Pollution					
3. Date/Month/Year of establishment of ENVIS Centre:	2005					
4. Name and designation of ENVIS Coordinator (2020-21):	<p>Dr. Pankaj Kumar Srivastava Principal Scientist & Coordinator CSIR-National Botanical Research Institute (NBRI), Rana Pratap Marg, Lucknow-226001</p> <p>Dr. Anju Patel Scientist & Co-Coordinator CSIR-National Botanical Research Institute (NBRI), Rana Pratap Marg, Lucknow-226001</p>					
5. Has the Host Organization constituted an Advisory Committee for guiding the activities of the Centre?	Yes, the host organization constituted an Advisory Committee for guiding the activities of the Centre.					
Composition of the Advisory Committee: (Select YES or NO: if YES kindly fill the right column space; if NO kindly leave it blank) <input type="radio"/> YES ✓ <input checked="" type="radio"/> NO	<ol style="list-style-type: none"> 1. Dr. U.C. Lavania, INSA Fellow (Chairman) 2. Dr. D. K. Upreti, Emeritus Scientist, CSIR NBRI (Co-Chairman) 3. Prof. Naveen Kumar Arora, Professor & Head, B.B.R. Ambedkar University, Lucknow 4. Dr. Geeta Asthana, Professor & Head, Dept. of Botany, University of Lucknow, Lucknow 5. Dr. A. K. Agarwal, Director, RSAC, Lucknow 6. Mr. Pankaj Kumar, General Manager, NTPC Ltd., Lucknow 7. Mr. Shailendra Kumar, General Manager, SAIL, Kolkata 8. Mr. Pradeep Sharma, Nodal Officer (Pollution Control), Kanpur 9. Mr. Pankaj Kumar, President (IIA), A Powertech Electricals Pvt. Ltd., Meerut 10. Mr. Mukesh Mittal, Vice President (Safety & Environment), Hindalco Industries Ltd., Sonbhadra 11. Dr. Pankaj Kumar Srivastava, Principal Scientist & Coordinator (ENVIS-RP), CSIR-NBRI 					
6. Current ENVIS-RP-NBRI Staff Structure:						
					2020-21	
Name	Position held	Qualification and Experience	Joining Date in ENVIS Centre	Joining Date in current position	Leaving Date (if applicable)	Emoluments drawn ₹
						Monthly Annual
Mr. Sunil Tripathi	Sr. Programme Officer	M.Sc. (Botany), ADCA, Ad.PGD in Bioinformatics, PG Diploma in IPRs	22/03/2018	22/03/2018	---	₹46,690 ₹5,60,280
Mr. Diwakar Saini	Information Officer	B.Sc.(PCM), Master of Computer Applications (MCA), ADCA Diploma One Year from SSL GIS three days Training (MoEF&CC) With BISAG Gandhi Nagar, Gujrat, ArcGis Two days training with ESRI at NBRI Lucknow	03/07/2017	03/07/2017	---	₹38,997 ₹4,67,964
Ms. Karishma Srivastava	IT Officer	MSc.(Biotechnology)	09/07/2020	09/07/2020	31/03/2021	₹31,539 ₹3,78,468
Mr. Akash Tiwari	Data Entry Operator	BSc.(Computer Science)	09/07/2020	09/07/2020	31/03/2021	₹14,641 ₹1,75,692

7.	Mandate of the CSIR-NBRI	Mandate of the ENVIS RP-NBRI
	Undertaking basic and applied research on various aspects of plant science, including documentation, systematics, conservation, prospection and genetic improvement with particular emphasis on under-exploited, non-traditional and wild plant genetic resources of the country for sustainable development and human welfare.	Systematically collect, compile and disseminate data on Plants and Pollution, which will be of immense use to several research organizations, town planners, policy makers, teachers and other stakeholders.

8. Databases:

8.1. Catalogue of Non-numeric Databases compiled by the ENVIS-RP-NBRI till date:

Sl.No.	Name of Database	Description (in brief)	Data type (descriptive/ graphical/ geospatial/ etc.)	Status of Updation/ Periodicity/ Data Points Compiled (including date/month/yr of last data point)	Source(s) of data	Online Availability (Whether uploaded on ENVIS Website)
1.	Acid rain	<ul style="list-style-type: none"> • Introduction of acid rain, • Causes and sources of acid rain, • Chemistry of acid rain • Effects of acid rain on soil, vegetation, plants, microorganisms and water bodies, • References. 	Descriptive with figure showing acidic effect of acid rain on plants.	Date of upload: 30/3/2013 (Monthly) Date of last update: 24/03/2021	Search engines of internet & different scientific publications	Uploaded on website (http://nbrienvis.nic.in/Database/1_2050.aspx)
2.	Fluoride	<ul style="list-style-type: none"> • Introduction of Fluoride, • Injury symptoms, • Indicators, • coniferous tree, deciduous trees..... • References. 	Descriptive with image of effect of Fluoride on coniferous tree.	Date of upload: 9/4/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2043.aspx)
3.	Bioremediation	<ul style="list-style-type: none"> • Introduction, • Phytoremediation, • Phytoextraction • Hyperaccumulator species • Phytodegradation/Biodegradation • Rhizofiltration, • Phytovolatilization, • References 	Descriptive with table of metal hyper accumulator species and their bioaccumulation potential.	Date of upload: 11/4/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2047.aspx)
4.	Nanoparticle	<ul style="list-style-type: none"> • Introduction, • Usages and advantages of Nanoparticles. • References. 	Descriptive with images of Nanoparticles and graphical representation of synthesis of Nanoparticles	Date of upload: 17/4/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2049.aspx)
5.	Biogas	<ul style="list-style-type: none"> • Introduction, • Production, • Gas formation, • Composition, biogas upgrading. • First biogas plant.... • References. 	Descriptive Graphical with images of Biogas formation plant and process.	Date of upload: 24/5/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2042.aspx)

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6.	Green House Gases	<ul style="list-style-type: none"> • Introduction, • Green house gases....., • Impact of global warming, agriculture, forest..... • References. 	Descriptive Graphical with image of green house gases in normal natural level.	Date of upload: 27/5/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2041.aspx)
7.	Metal/ Metalloid	<ul style="list-style-type: none"> • Introduction, • Sources, • Bioindicators • Accumulators • References 	Descriptive Graphical with table of hyper accumulator plants for Metal/Metalloid	Date of upload: 27/9/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2160.aspx)
8.	Nitrogen oxides	<ul style="list-style-type: none"> • Introduction, sources, • Effects, • Indicators, • Factors effecting sensitivity, • References 	Descriptive with images of some crop species such as bean, leak and pea, and they are regarded as very sensitive to nitrogen oxides.	Date of upload: 23/10/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2039.aspx)
9.	Smog	<ul style="list-style-type: none"> • Introduction, • causes of smog, • Effects on plants, • Ozone diminished photosynthesis • Economic hardship • Detection of smog. • References 	Descriptive with images of effect of ozone on plant leaf surface	Date of upload: 21/11/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2051.aspx)
10.	Indoor air pollutants	<ul style="list-style-type: none"> • Indoor air pollutants..... • Simple steps to remove indoor air pollutants. • Some example of indoor..... • References 	Descriptive Graphical with images of sources of indoor air pollutants	Date of upload: 6/12/2013 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2048.aspx)
11.	Mercury (Hg) in the environment	<ul style="list-style-type: none"> • Hg in the environment • Selenium Applied to Reduce Mercury Accumulation in Rice • Mercury Accumulator plants • Hg accumulates in the food chain, • Movement of metals within plant roots, • Hg effects on plants 	Descriptive with images of Mercury Pollution....., Selenium Successfully Applied to Reduce Mercury Accumulation in Rice, Hg accumulator, Hg in food chain.	Date of upload: 8/6/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2034.aspx)

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		<ul style="list-style-type: none"> References 				
12.	Cadmium (Cd) and plants	<ul style="list-style-type: none"> Introduction, Effects of Cd exposure to plants at different levels in photosynthetic machinery Effect of Cd on ROS generation, Cd effect on plant growth and enzymes, Long distance transport of heavy metals and references 	Descriptive with image of effect of cadmium on plant, Cd effect on plant growth, long-distance transport of heavy metals, list of sensitive plants of cadmium contamination and accumulation tendency for cadmium in various crop samples.	Date of upload: 8/7/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2031.aspx)
13.	Lead (Pb) effects on plants	<ul style="list-style-type: none"> Lead effects on Plants Source of lead pollution, Effects of lead, enzymes activities, Lead tolerance in plants, Photosynthesis and references 	Descriptive with representation of sources of lead in environment, lead toxicity in plants, mechanism of tolerance and accumulation of metal and effect of lead on plant physiology	Date of upload: 19/8/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2033.aspx)
14.	Chromium (Cr)	<ul style="list-style-type: none"> Introduction of chromium, Physiological responses of plants to chromium, Effect of chromium on plant physiology, Nutritional and toxic effect of chromium, Toxicity of chromium to plants, Chromium in the environment and references 	Descriptive with image of chromium plant interaction and relationship, Cr in soil and water, Lemna plants growth under Cr (VI) induced stress, Reduction of Cr (VI) to Cr (III) in plant cells and medium, Enhancing phytoremediation of chromium-stressed soils through plant-growth-promoting bacteria	Date of upload: 5/12/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2029.aspx)
15.	Lindane insecticide	<ul style="list-style-type: none"> Introduction, Technical lindane, Enzymatic basis of lindane degradation and in microorganisms, Rhizoremediation of lindane, Mode of dose transfer of lindane, Environmental fate and 	Descriptive with chemical properties of Lindane, images of insects treated by lindane and mode of dose transfer of Lindane	Date of upload: 16/12/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2037.aspx)

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		references				
16.	Arsenic	<ul style="list-style-type: none"> • Introduction of As, • Arsenic Chemistry, • Arsenic contamination, • Toxicity of Arsenic and Environmental transport and distribution • References 	Descriptive with images of Skin diseases caused by Arsenic toxicity, As standards of WHO, EU, US EPA, table of countries contaminated with As	Date of upload: 16/12/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2035.aspx)
17.	Endosulfan	<ul style="list-style-type: none"> • Present scenario of pesticides • Phytoremediation • Remediation of Endosulfan • Phytoremediation Using Selected Plant Species • Rhizoremediation of endosulfan • Degradation pathway in plants • Environmental Effects • Precautions... • References 	Descriptive with images of chemical structure of endosulfan.....and transport and chemical degradation of endosulfan	Date of upload: 17/12/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2038.aspx)
18.	Sulphur dioxide (SO ₂)	<ul style="list-style-type: none"> • Introduction of SO₂, • injury symptoms, • indicators, • Coniferous tree, • Deciduous trees and shrubs, • Bryophytes and Fungishowing injury symptoms,and • factor effecting sensitivity • Reference 	Descriptive with images of plant's leaf injured by exposure of SO ₂ and table showing plant species sensitive to SO ₂	Date of upload: 23/12/2014 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2040.aspx)
19.	Nickel	<ul style="list-style-type: none"> • Introduction • Sources of Nickel • Inventory of nickel in various global environmentl • Nickel is delivered into the environment by several pathways • Nickel toxicity in Plants • Nickel deficiency • Nickel distribution in plant organs • Toxic Effects of Ni on Plants • References 	Descriptive with image of Nickel toxicity in Plants, Severe leaflet tip necrosis due to nickel deficiency in nitrogen-fixing plants., Pecan—a hydrophilic species: Ni enables normal spring growth upon application to foliage soon after bud break, Plants showing Nickel treatment, Sugar beet plant showing	Date of upload: 5/5/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2028.aspx)

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			Nickel toxicity			
20.	Zinc	<ul style="list-style-type: none"> • Introduction • Importance of Zinc in Plant Growth • Role of Zinc in the Crop • Crops that respond to zinc • Zinc Deficiency in Crop • Symptoms of Zinc deficiency include following symptoms • Soil Conditions that can result in Zinc deficiency include • Soil conditions and the need for Zinc fertilizers • Diagnosing Zinc Disorders • References 	Descriptive with image of Role of Zinc in the Crop, Sufficiency levels of Zinc for major agronomic crops, vegetable, and fruits grow in Minnesota, Zinc Deficiency in Crop, Symptoms of Zinc deficiency, Soil Conditions that can result in Zinc deficiency, Soil conditions and the need for Zinc fertilizers, Diagnosing Zinc Disorders	Date of upload: 8/5/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website http://nbrienvis.nic.in/Databas e/1_2136.aspx)
21.	Copper	<ul style="list-style-type: none"> • Introduction • Copper is essential for many plant functions. • Factors Affecting Availability • High Response Crops • Copper toxicity • Copper sulphate • Effects on plants growth • Using Copper in a Fertilizer Program • Copper deficiency • Copper in the environment • References 	Descriptive with image of Copper toxicity, Effects on plants growth, Using Copper in a Fertilizer Program, Copper deficiency, Copper in the environment	Date of upload: 20/4/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website http://nbrienvis.nic.in/Databas e/1_2032.aspx)
22.	Iron	<ul style="list-style-type: none"> • Introduction • Iron and Plant • Distribution of Iron in Plants • Iron Toxicity • Cause of Iron Toxicity and Prevention • Symptoms of Iron deficiency • Treatment options for iron deficiency in trees and shrubs • Iron chlorosis • Causes of Iron chlorosis • Prevention and control of Iron chlorosis 	Descriptive with image of Iron transport in rice, Model of acquisition and transport of iron in plants with an emphasis on changes of the iron-binding., Iron toxicity on marigold, Symptoms of Iron deficiency, Iron chlorosis, Fe chelation and long distance Fe	Date of upload: 20/5/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website http://nbrienvis.nic.in/Databas e/1_2140.aspx)

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		<ul style="list-style-type: none"> • Susceptibility of plants to Iron deficiency • Several following methods are available for treating Iron deficiency • Advantages and disadvantages of Iron chlorosis control methods • Fe chelation and long distance Fe transport • Transcriptional changes in response to Fe deficiency in specific root layers • References 	transport, Transcriptional changes in response to Fe deficiency in specific root layers,			
23.	Neonicotinoids	<ul style="list-style-type: none"> • Introduction • Neonicotinoids contaminated ecosystem • Agricultural performance of Neonicotinamide • Seed Coating • Importance of bee in agriculture • Neonicotinoid and Pollinators • Evidence for impacts on non-target organisms • Environmental concerns 	Descriptive with image of Neonicotinoids contaminated ecosystem, Agricultural performance of Neonicotinamide, Seed Coating, Importance of bee in agriculture, Neonicotinoid and Pollinators, Environmental concerns	Date of upload: 5/12/2016 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website http://nbrienvis.nic.in/Databases/1_2126.aspx)
24.	Organophosphate	<ul style="list-style-type: none"> • Introduction • Types of Organophosphorus compounds or organophosphates (OPs) group • Mechanisms of toxicity • Impact on Crop and Distribution pathways • Organophosphorus pesticides are mainly used in crop protection • OPs in the environment • References 	Descriptive with image of Corn uptake and insecticide use in field, Mechanism of Ops Toxicity, Root maggots are less than 1/3 of an inch and tunnel through the crop roots, Consumption of organophosphate pesticides by various crops, Distribution Pathway for agricultural pesticides, Organophosphorus pesticides are mainly used in crop protection ,	Date of upload: 12/1/2016 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website http://nbrienvis.nic.in/Databases/e/1_2147.aspx)
25.	Carbofurans	<ul style="list-style-type: none"> • Introduction • Carbofuran Application 	Descriptive with	Date of upload:	As above	Uploaded

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		<ul style="list-style-type: none"> • Carbofuran Mode of action • Cabofuran pesticides use in Agricultural field • Safety for the environment • References 	image of sprays carbofuran on a tree, Carbofuran Application, Carbofuran Mode of action, Degradation pathway of Carbofuran, Carbofuran pesticides use in Agricultural field, Carbofuran in the environment	15/12/2016 (Monthly) Date of last update: 24/03/2021		on website (http://nbrienvis.nic.in/Databas e/1_2148.aspx)
26.	Wasteland management through plants	<ul style="list-style-type: none"> • Waste Land • Classification of waste land • Categories of Wastelands in India • Causes of land degradation • Choice of Plant Species for Waste land Managemen • Plant species used for remediation • Mining/Industrial waste land • Wasteland Development Schemes • Major Ongoing Project • Objectives • Activities: The major activities taken up under the scheme • Modified strategies and suggestions • References 	Descriptive with image of Waste Land Management through Plant, Classification of waste land, Categories of Wastelands in India, Causes of land degradation, Plant species used for remediation, Some more plant species used ...,	Date of upload: 22/9/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2063.aspx)
27.	Role of plants in CO ₂ sequestration	<ul style="list-style-type: none"> • Introduction • Terrestrial • Geologic • Participation of Plant • Carbon sequestered into the soil • Forests Are Truly a Green Way to Reduce CO₂ • References 	Descriptive with image of Role of Plants in CO ₂ Sequestration, Possible functional role of root exudate components in the rhizosphere ¹⁰ , Participation of Plant, n Carbon sequestered into the soil, Forests Are Truly a Green Way	Date of upload: 11/11/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2162.aspx)

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			to Reduce CO ₂			
28.	Climate change- CO ₂ enrichment	<ul style="list-style-type: none"> • Introduction • Five common methods of generating extra amounts of CO₂ • High CO₂ Makes Crops Less Nutritious • Quality and Quantity • Climate change affected CO₂ level in the environment • Project Publications Related to CO₂ enrichment • References 	Descriptive with image of effect of elevated CO ₂ enrichment, Maize and wheat yield show climate impact, High CO ₂ Makes Crops Less Nutritious, Climate change affected CO ₂ level in the environment, what we should consider to crop with climate change	Date of upload: 7/10/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2163.aspx)
29.	Climate change- Methane	<ul style="list-style-type: none"> • Introduction • Source • Methane Emission • CH₄ production, transport and consumption • Methane impacts on Climate change • References 	Descriptive with image of estimated sources of methane, Microbial turnover of methane and transport pathways of gases in wetlands, CH ₄ production, transport and consumption in the rice rhizosphere. Reactions within..., Methane impacts on Climate change	Date of upload: 16/10/2015 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2164.aspx)
30.	Ozone	<ul style="list-style-type: none"> • Introduction, • Injury symptoms, • Yield loss caused by O₃ • Indicator of Ozone, • Herbs/Grasses/Crops • Coniferous tree • Deciduous trees and shrubs • Bryophytes • References 	Descriptive with images of injury symptom of ozone on plants	Date of upload: 26/12/2017 (Monthly) Date of last update: 24/03/2021	Search engines like: Pub med, Science Direct, Google Scholar etc. Magazines like: Down to earth, The pollution	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2044.aspx)
31.	Nitrogen fertilizer	<ul style="list-style-type: none"> • Introduction • Properties of Nitrogen fertilizers • Uses • Nitrogen fixing cover 	Descriptive with images of Graph of Nitrogen fertilizer in environment of US, Image of	Date of upload: 10/6/2017 (Monthly) Date of last	As above	Uploaded on website (http://nbrienvis.nic.in/Databas e/1_2044.aspx)

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		<p>crops</p> <ul style="list-style-type: none"> • Nitrogen transformation in the soil • Enhancing fertilizer efficiency • Eco friendly liquid formulation for nitrogen fertilizer protection • Benefits • References 	Nitrogen fixing cover crops, Nitrogen cycle, Graph of Nitrogen fertilizer in winter wheat	update: 24/03/2021		e/1_2199.aspx)
32.	Hydrocarbon	<ul style="list-style-type: none"> • Introduction, • Uses of Aromatic hydrocarbons, • Symptoms and Signs of Hydrocarbon toxicity, • Polycyclic aromatic hydrocarbons (PAHs), • References 	Descriptive with images Symptoms and Signs of Hydrocarbon toxicity and Polycyclic aromatic hydrocarbons (PAHs)	Date of upload: 26/12/2018 (Monthly) Date of last update: 24/03/2021	Search engines like: Pub med, Science Direct, Google Scholar etc. Magazines like: Down to earth, The pollution	Uploaded on website (http://nbrienvis.nic.in/Database/1_2465.aspx)
33.	Carbon monoxide	<ul style="list-style-type: none"> • Introduction • Properties of Carbon monoxide • Uses • Carbon Monoxide Sources in the Home • Some Indoor plants for removing formaldehyde, benzene, and carbon monoxide from the air • Benefits • References 	Descriptive with images Indoor plants for removing formaldehyde, benzene, and carbon monoxide from the air	Date of upload: 10/1/2018 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2462.aspx)
34.	Suspended Particulate Matter	<ul style="list-style-type: none"> • Introduction • Microscopic solid or liquid matter suspended in the Earth's atmosphere • Sources of particulate matter • How are particles formed • Causes of Particulate Matter • Man Made Causes • Effects of Particulate Matter • Benefits • References 	Descriptive with images of Graph of Effects of Particulate Matter and main group	Date of upload: 10/2/2018 (Monthly) Date of last update: 24/03/2021	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_2463.aspx)
35.	Emerging Pollutants	<ul style="list-style-type: none"> • Introduction • Effects of Pharmaceuticals and Personal Care Products in Environment • Pharmaceuticals 	Descriptive with images of Graph of Effects of Pharmaceuticals and Personal Care Products in	Date of upload: 22/2/2021 (Monthly) Date of last update:	As above	Uploaded on website (http://nbrienvis.nic.in/Database/1_Emergin)

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		category contains <ul style="list-style-type: none"> Personal Care Products Endocrine Disrupting Compounds Effect of Emerging Contaminants on Crops Removal of Heavy Metals and Emerging Contaminants by Different Plants Emerging Contaminants in Our Drinking Water Challenges with the Emerging Pollutants What We Know or Don't Know! References 	Environment and Effect of Emerging Contaminants on Crops	31/03/2021		g Pollutants_11866.aspx)

9. Information/ Knowledge Products:

9.1 ENVIS-RP-NBRI Newsletters published during the Financial Year (2020-21):

Cover snapshot	Quarter/ Volume/ Issue/ Theme Main Articles	Number of copies printed and circulated	URL of the PDF file in ENVIS website
	Vol.16, No.02	500	http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7871&LinkId=740&Year=2020
	Vol.16, No.03	500	http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7872&LinkId=740&Year=2020
	Vol.16, No.04	500	http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=8899&LinkId=740&Year=2020

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	Vol.17, No.01	500	http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=9899&LinkId=740&Year=2021
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9.2. ENVIS-RP-NBRI Green Planner App Upgraded during the Financial Year (2020-21):




Publication/ Product Theme(s)/ Subject Area(s)	Description
<p>“Green Planner” <i>‘Plants for Air Pollution Control’</i></p> <ol style="list-style-type: none"> 1. Android Mobile Application 2. iOS Mobile Application 	<ul style="list-style-type: none"> ➤ Hosting of web admin panel for Green Planner App iOS and Android App for 1 Year ➤ iTunes hosting of Green Planner App for 1 Year ➤ Green Planner iOS Application Code and X-Code Swift Version upgrade from Version-4 to Version-5 ➤ Green Planner Web Admin Panel Code Update from PHP Version 5.6 to Version 7.2

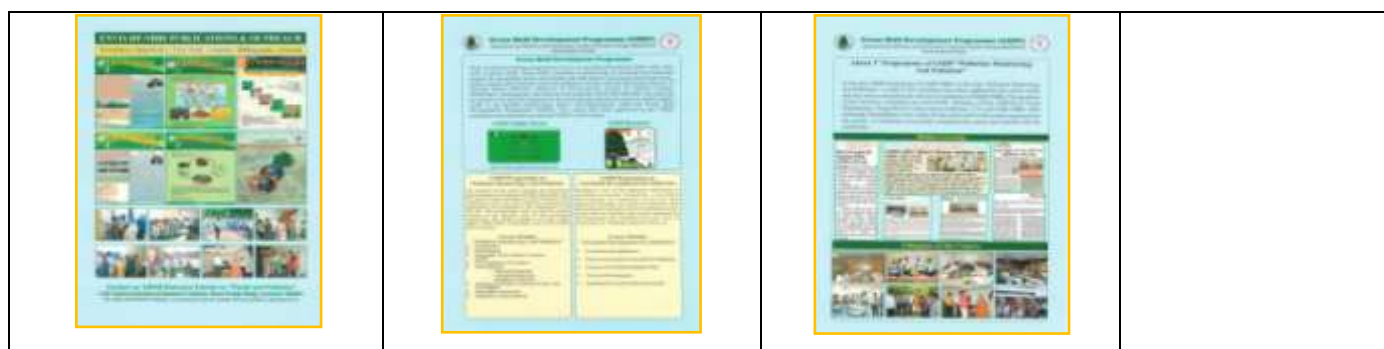
9.3. Information Products published/ released:

9.3.1. Information Products published:



Publication / Product	Theme(s)/ Subject Area(s)	Year of Publication	URL of the PDF file in ENVIS website
Bibliography	Arsenic with special reference to plants	2008	http://www.nbrienvis.nic.in/WriteReadData/Publication/oth_634825317586184608_oth_634793284999489462_Arsenic_Pollution.pdf
Bibliography	Climate Change	2011	http://www.nbrienvis.nic.in/WriteReadData/Publication/oth_634825331816198412_oth_634793262920506617_A4-Size_Bibliography-2011.pdf
Bibliography	Transgenic Plants Used for Phytoremediation	2013	http://www.nbrienvis.nic.in/WriteReadData/Publication/NBRI%20Bibliography.pdf
Case Study	Case studies on phytoremediation	2014	http://www.nbrienvis.nic.in/WriteReadData/Publication/Case%20Studies.pdf
Case Study	Case Studies on Waste Land Management and Ecorestoration	2015	http://nbrienvis.nic.in/WriteReadData/Publication/NBRI%20-%20Case%20Study%202015.pdf

9.3.2. ENVIS-RP-NBRI Brochure published:

Cover snapshot			URL of the PDF file in ENVIS website
			http://nbrienvis.nic.in/PublicationCommon.aspx?LinkId=740



9.2.3. Other publications/ information products:

Cover snapshot	Publication/ Product Theme(s)/ Subject Area(s)	Green Planner App Download Platform	URL of the PDF file in ENVIS website
	<p>“Green Planner” <i>‘Plants for Air Pollution Control’</i></p> <p>Android Mobile Application</p>	<p>To be available from the “Google Play” after launching https://play.google.com/store/apps/details?id=com.nbri_csir_new</p>	<p>http://nbrienvis.nic.in/Database/1_2414.aspx</p>
	<p>“Green Planner” <i>‘Plants for Air Pollution Control’</i></p> <p>iOS Mobile Application</p>	<p>To be available from the “iTunes” after launching https://apps.apple.com/us/app/envis-nbri-green-planner/id136780150?ls=1</p>	<p>http://nbrienvis.nic.in/Database/2_2621.aspx</p>

10. ENVIS Website(ENVIS-RP-NBRI whose Website has been restructured may provide the Performance Report/Graphs generated therein wherever possible):

- 10.1. URL: <http://www.nbrienvis.nic.in>
- 10.2. Status of restructuring of Website: Restructured on (07/07/2014)
- 10.3. Frequency of updating Website 2020-21: *
- 10.4. Subject-specific database updation (numeric/ others): 34
- 10.5. Publication uploaded/ updated on Website (2020-21): *

11. User Engagement and Interaction

User engagement and interaction	FY 2015-16	FY 2016-17* (as on 31-March-2017)	FY 2017-18*	FY 2018-19* (as on 31-March-2019)	FY 2019-20* (as on 31-March-2020)	FY 2020-21* (as on 31-March-2021)
i. Total number of visits	111557	122442	*	1100117	1365287	1611206
ii. Number of unique visits	7028	12900	*	*	*	*
iii. Reports Downloaded/Read	745	224	*	*	*	*
iv. Total Number of Queries received	90	177	*	*	*	*
v. Number of Queries	90	180	*	*	*	*

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<i>User engagement and interaction</i>	<i>FY 2015-16</i>	<i>FY 2016-17* (as on 31-March-2017)</i>	<i>FY 2017-18*</i>	<i>FY 2018-19* (as on 31-March-2019)</i>	<i>FY 2019-20* (as on 31-March-2020)</i>	<i>FY 2020-21* (as on 31-March-2021)</i>
responded						

***These data could not be retrieved from the Website Admin Panel/ Performance Reports due to HTTP error display; ENVIS Secretariat has been informed about this error).**

Mode of Query Receipt	Number of Queries Received	Number of Queries Responded	Reasons for shortfalls, if any, and action taken to rectify
Online (CMS based website)	*	*	NA
Email (official NIC server)	-	-	NA
Postal/Telephonic (incl. hand post)	26	26	NA
Physical	417	417	NA

12. Implementation of Annual Plan of Activities of the Financial Year (2020-21):

Activity/ Target	Achievements	Shortfalls, if any, and reasons therefore
Centre's proposed activities 2019-20		
1. Up-gradation of website	Updation with latest information	
2. E-News and Subjective News	Updation with latest information	
3. Photo gallery	Updations of activities photograph http://nbrienvis.nic.in/ViewAlbum.aspx	
4. Compilation of Abstract, bibliography, New Articles, events etc on the subject area	Up-gradation on the website http://nbrienvis.nic.in/Archive_Modules.aspx?Year=2019&Mid=100 http://nbrienvis.nic.in/Bibliography.aspx?Name=	
5. Information on R & D institutions, policy, programmes and guidelines in the subject area	Up-gradation on the website http://www.nbrienvis.nic.in/Database/1_174_5.aspx	
6. List of Journals in Publication section	Uploaded on the website http://www.nbrienvis.nic.in/PublicationCommon.aspx?LinkId=1399	
7. List of Theses in Publication section	Uploaded on the website http://nbrienvis.nic.in/PublicationCommon.aspx?LinkId=738	
8. List of Books in Publication section	Uploaded on the website http://nbrienvis.nic.in/PublicationCommon.aspx?LinkId=739	
9. Newsletter in Publication section	Published Four Quarterly Newsletters (please see 9.1 of this report)	
10. List of Case studies in Publication section	Uploaded on the website http://nbrienvis.nic.in/PublicationCommon.aspx?LinkId=741	

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Activity/ Target	Achievements	Shortfalls, if any, and reasons therefore
11. Videos	Uploaded on the website in publication and kind section http://www.nbrienvis.nic.in/PublicationCommon.aspx?LinkId=1385 http://www.nbrienvis.nic.in/KidsCentre/Videos_1675.aspx	
12. List of Presentations in Publication section	Uploaded on the website http://nbrienvis.nic.in/PublicationCommon.aspx?LinkId=1397	
13. Latest News section	Uploaded on the website http://nbrienvis.nic.in/LinkPage.aspx?Year=2019&Mid=4	
14. Glossary section	Uploaded on the website http://nbrienvis.nic.in/SearchGlossary.aspx?Name=	
15. List of activity in Major Activity section	Uploaded on the website http://nbrienvis.nic.in/LinkPage.aspx?Year=2020&Mid=7	
16. R & D projects report	Uploaded on the website http://www.nbrienvis.nic.in/Content/1_2097.aspx	
17. Networking	Up-gradation, Weekly	
18. List of experts	Uploaded on the website http://nbrienvis.nic.in/Content/experts_120.aspx	

‘Meeting of ENVIS Review by Video Conference’ during February 2nd, 2021.

A. Regular Activities: Web-based Environmental Information

Collection and Compilation of Information and Data

1. Development and regular updation of <i>databases</i> (descriptive, numeric, pictorial, geospatial, etc.) on the assigned subject area and regular uploading of the same in the <i>Subject Area</i> section of the ENVIS Website, after due verification/ authentication, with suitable referencing of data sources.	Done	
2. Compilation of <i>Abstracts, Bibliography, News articles, Events, etc.</i> on the subject area and uploading the same in the relevant section of ENVIS Website.	Done	
3. Identification of data gaps and formulation with implementation of action plan to fill them.	Need of a mobile application on list of plants mitigating air pollutants as suggested by the Advisory Committee of ENVIS-RP-NBRI. In follow- up, An android mobile app and iOS Mobile App has been developed.	
Maintenance of ENVIS Website and User Engagement through it		
4. Maintaining the ENVIS Website up-to-date and user-engaging, and as an inventory of authentic and reliable information in the subject area	Done	
5. Query-Response/ Referral service to stakeholders.	Up to date	
6. Developing and upgrading a Kids' Corner.	Done	
7. Maintaining a disaggregated record of visitors, including unique visitors, to the	Done	

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Website.		
Publications and Value-Addition		
8. Publishing 4 <i>Newsletters</i> and uploading the same in the relevant section of ENVIS Website.	Done	
9. Processing/ analyzing data collected and bringing out value-added information Products	The android mobile app and iOS mobile app have been developed on list of plants mitigating air pollutants, namely " Green Planner ".	
10. Collecting books, reports and journals on the subject area; Uploading E-versions of books, reports, etc. on the ENVIS Website. Uploading <i>Abstracts</i> of books, reports, journals and articles of those whose e-versions are not available.	Done	

Reaching-out/Networking Activities		
11. ENVIS RP-NBRI celebrated 'World Environment Day'-2020	<p>ENVIS-RP-NBRI celebrated 'World Environment Day' on 5th June, 2020. This year, the theme is "Biodiversity—a concern Time for Nature". Due to amid COVID-19 situation, the day was celebrated through digital mode. An online competition for school children in different categories viz., Essay Writing, Poster and Cartoon was organised. The target group was categorised into two groups (i.) from class 5th to 8th and (ii.) from class 9th to 12th.</p> <p>On this occasion Prof. SK Barik Director, CSIR-NBRI addressed the importance of Biodiversity and needs of its conservation. Prof. Barik emphasised the Indian Biodiversity Hotspots and its ecological importance.</p> <p>http://nbrienvis.nic.in/Database/World_Environment_Day-2020_7736.aspx</p>	
12. ENVIS-RP-NBRI Celebrated World Ozone Day-2020	<p>ENVIS-RP-NBRI Celebrated World Ozone Day-2020 on 16th September 2020. On this occasion ENVIS-RP-NBRI organised a Webinar on the topic "Ozone for life: 35 years of ozone layer protection" by Dr. Pankaj Kumar Srivastava, Principal Scientist & ENVIS-Coordinator.</p> <p>Dr. Srivastava emphasised on the different aspects like how ozone layer helping to preserve life on the planet, Depletion of ozone layer, Montreal Protocol, Ozone Depleting Substances (ODS) and their uses in daily life, current status of the ozone hole. The webinar was live streaming in different online platform like Google Meet, Facebook and YouTube. A total number of 224 participants were registered from 13 States and 62 Institutes to attend the webinar from all over India. Feedbacks of all the participants were obtained and they were awarded with e-certificates and participation.</p> <p>http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=9773&Year=2020</p>	
13. ENVIS-RP-NBRI celebrated "National	On this occasion ENVIS-RP-NBRI celebrated	

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<p>Science Day-2021”</p>	<p>‘National Science Day’ on 26th February, 2021 at Kendriya Vidyalaya, Gomti Nagar, Lucknow. This year, the theme is "Future of Science, Technology & Innovation (STI): Impacts on Education, Skills, and Work".</p> <p>On this occasion Dr. Pankaj Kumar Srivastava, Coordinator, ENVIS-RP-NBRI delivered interactive session on the importance of “Creativity & Innovation” to the Science Students of Kendriya Vidyalaya, Gomti Nagar, Lucknow.</p> <p>Mr. Sunil Tripathi, Programme Officer interacted with the students and gave detailed account of “Green Planner App” developed by ENVIS-RP-NBRI including information about air pollution mitigan plants for different premises viz; Road Side, Road Divider, Indoor and Greenbelt.</p> <p>The programme had included interactive displays on “Plants as Indicators of Pollution”, “Plants for Greenbelts”, “Arsenic Pollution & its amelioration by plants” and distributed ENVIS Newsletters along with Brochure.</p> <p>15 indoor plants viz. Syngonium sp., Dracaena marginata, Ficus elastica, Dypsislutescens, Sansevieria marginata, Ficus longifolia, Thuja compacta, Rhoeo discolor, Pedilanthus sp., Rhaps palm, Aspidistra sp., Chlorophytum comosum, Sansevieria trifasciata, Bougainvillea sp., and Bauhinia blakeana were showcased to students and briefed them about their role in mitigating indoor air pollutants.</p> <p>Mr. Diwakar Saini, Ms. Karishma Srivastava and Mr. Akash Tiwari were also participated in the event and showcased ENVIS-RP-NBRI website to students.</p> <p>Dr. C.B.P. Verma, Principal, Kendriya Vidyalaya, Gomti Nagar, Lucknow also addressed the students.</p> <p>http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11848&Year=2021</p>	
<p>14. ENVIS-RP-NBRI celebrated World Water Day 2021</p>	<p>ENVIS RP-NBRI celebrated ‘World Water Day’ on 22nd March, 2021. This year’s theme is “valuing water”. On this occasion Prof. S.K. Barik Director, CSIR-NBRI addressed the importance of water and raised awareness of the global water crisis. He emphasized the eco-friendly management of polluted water by planning trees.</p> <p>On this occasion Dr. Anju Patel Scientist, CSIR-NBRI focused on the importance of rainwater harvesting and efficient utilization of available resource i.e. in a sustainable manner. ENVIS-RP-NBRI also conducted awareness among the masses by creating a video of the Gomti river and captured the mass attention.</p> <p>http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11859&Year=2021</p>	
<p>15. Maintaining a list of Experts in the subject area and uploading the same, along with updated C.V., in the relevant section of ENVIS Website.</p>	<p>Uploaded http://nbrienvis.nic.in/Content/experts_120.aspx</p>	
<p>16. Coordination with the Ministry for timely dissemination of relevant and adequate information to stakeholders.</p>	<p>Done</p>	

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17. Formulate strategic plans to generate sources of funds from corporate sector and/ or through subscriptions of Newsletters/ other publications	In process	
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B. SPECIAL ACTIVITIES		
18. Focus on database development (numeric and descriptive), with due authentication in consultation with Line Departments/ research institutes, etc.	CSIR e journal consortium	
19. Network and undertake outreach activities with Universities/ Research bodies/ researchers in the State, similar to those of Odisha ENVIS, so that the ENVIS collections/ repositories can be enriched, including with their contact details/ CVs, etc.	Completed fourth events of outreach as on 31-03-2021	
20. Circulate Newsletters and knowledge products to as many stakeholders as possible in the State, especially policy makers/ planners.	Circulating	
21. Link its Website to other Government Websites; develop the vernacular Website; and undertake other awareness enhancing activities within the State.	http://www.nbrienvis.nic.in/Content/1_2105.aspx	
22. Maintain a Register for keeping track of queries received and transferred/ answered.	Maintained	
23. Build institutional repositories of various types of media related to environmental issues.	In process	
24. Bring out a Brochure on environmental issues to spread awareness about World Environment Day, focusing on forestry/ mining/ Climate Change/ disasters/ etc.	In process	

25.	New initiatives taken during the Financial Year (2020-21):	<ul style="list-style-type: none"> ➤ ENVIS RP-NBRI celebrated ‘World Environment Day’-2020 Dated- 5 June 2020 Url: http://nbrienvis.nic.in/Database/World_Environment_Day-2020_7736.aspx ➤ ENVIS-RP-NBRI Celebrated World Ozone Day-2020 Dated-16 September 2020 Url: http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=9773&Year=2020 ➤ ENVIS-RP-NBRI celebrated “National Science Day-2021” at Kendriya Vidyalaya, Gomti Nagar, Lucknow Dated-26 February 2020 Url: http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11848&Year=2021 ➤ ENVIS-RP-NBRI celebrated World Water Day 2021 Dated-22 March 2021 Url: http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11859&Year=2021
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13. Status of existing hardware:

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	Hardware item	Specification	Sanction Order with Date	Date of procurement
Procured from ENVIS Grant	Computer -2 (Old)	Desktop Computer with Windows 8 operating system, Intel Core i3, Model HP/3330 with 18.5" TFT Monitor	Order No: 8/145/13-P/Plg_861 dated 12-2-14	Order No: 8/145/13-P/Plg_861 dated 12-2-14
	Multifunctional Printer	HP Laserjet 200 Color MFP M276 PCL 6	Order No 8/11/14-P Dated 29.05.2014	09.06.2014

14. Status of utilization of grant during the financial year 2020-21 as on 31st March 2020 and reasons for shortfalls, if any:

	Head of Expenditure	Sanctioned amount (₹)	Actual Expenditure (₹)	Reasons for Shortfall/ Excess (if any)
Recurring Annual	Manpower	₹15,82,409	₹14,45,634	N/A
	Others (Database development, website maintenance, printing of Newsletters & Prakriti map, contingency, stationary, consumables, AMC, Internet charge, training, inter-center interaction workshops, expenses on monitoring, ISBEID database development, mobile app development etc.)	₹4,65,300	₹4,36,216	N/A
Non-Recurring	NIL	NIL	NIL	NIL

15. Issues/ hurdles faced in undertaking ENVIS activities:

1.	Performance report at Admin Panel is not working properly to fetch the statistical data.
2.	Requirement of two new computation system of (i7 processor with Win10 Pro) for proper and fast working of ENVIS-RP-NBRI activity.

Details of Activities Done in 2020-21

1. Activities done as per ENVIS-RP-NBRI's mandate

Sl.	Topic	Content Updated and URL
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No.		
1.	About Us	<ul style="list-style-type: none"> ➤ Addition of Page of ENVIS Portal Url: http://nbrienvvis.nic.in/Content/3_2485.aspx ➤ Updation of centre number in About the ENVIS Url: http://nbrienvvis.nic.in/Content/1_846.aspx ➤ ENVIS Secretariat Url: http://www.nbrienvvis.nic.in/Content/3_847.aspx ➤ Introduction to ENVIS-RP-NBRI Centre Url: http://www.nbrienvvis.nic.in/Content/1_1658.aspx ➤ ENVIS-RP-NBRI Brochure Url: http://www.nbrienvvis.nic.in/Content/1_1659.aspx ➤ ENVIS-RP-NBRI Brochure Url: http://www.nbrienvvis.nic.in/Content/1_1659.aspx ➤ Organisation Url: http://www.nbrienvvis.nic.in/Content/1_2088.aspx ➤ Organisation Structure Url: http://www.nbrienvvis.nic.in/Content/1_2090.aspx ➤ Running Projects Url: http://www.nbrienvvis.nic.in/Content/2_2489.aspx ➤ Completed Projects Url: http://www.nbrienvvis.nic.in/Content/1_2490.aspx
2.	ENVIS Network	<ul style="list-style-type: none"> ➤ Addition of 69th ENVIS centre, Itanagar, Arunachal Pradesh Url: http://nbrienvvis.nic.in/Content/ENVISCentres_491.aspx
3.	Experts	<ul style="list-style-type: none"> ➤ ENVIS Economic Advisor Url: http://www.nbrienvvis.nic.in/Content/1_1663.aspx ➤ ENVIS-RP-NBRI Url: http://www.nbrienvvis.nic.in/Content/1_1664.aspx ➤ Advisory Committee Url: http://www.nbrienvvis.nic.in/Content/1_1666.aspx ➤ National Experts Url: http://www.nbrienvvis.nic.in/Content/1_1667.aspx ➤ International Experts Url: http://www.nbrienvvis.nic.in/Content/1_1668.aspx
4.	FAQs	<ul style="list-style-type: none"> ➤ Addition of 15 new FAQs Url: http://www.nbrienvvis.nic.in/Content/FAQs_123.aspx
5.	Contact Us	<ul style="list-style-type: none"> ➤ Details of ENVIS team (2 employees were added from the list) Url: http://www.nbrienvvis.nic.in/Content/contactus_124.aspx
6.	Related Links	<ul style="list-style-type: none"> ➤ Related Links is not display Menu Section Url: http://www.nbrienvvis.nic.in/Content/1_2095.aspx
7.	Subject Area	<ul style="list-style-type: none"> ➤ News Bulletin: Updation of E-News of up-to-date Url: http://www.nbrienvvis.nic.in/Database/1_2124.aspx ➤ Updation of Subjective News of March Url: http://www.nbrienvvis.nic.in/Database/1_2003.aspx ➤ Messages Url: http://www.nbrienvvis.nic.in/Database/1_2006.aspx ➤ Green Skill Development Programme (GSDP) Url: http://www.nbrienvvis.nic.in/Database/GSDP_2631.aspx ➤ Course Conducted During 2018-19 Url: http://www.nbrienvvis.nic.in/Database/Course_Conducted_11841.aspx ➤ Course Conducted During 2020-21 Url: http://www.nbrienvvis.nic.in/Database/Course_Conducted_During_2632.aspx ➤ World Environment Day-2020 Url: http://www.nbrienvvis.nic.in/Database/World_Environment_Day-2020_7736.aspx ➤ Database :Updation of New added Numerical data and Reference Data for 34 databases. <ul style="list-style-type: none"> 1. Nickel Url: http://nbrienvvis.nic.in/Database/1_2028.aspx 2. Chromium Url: http://nbrienvvis.nic.in/Database/1_2029.aspx 3. Cadmium Url: http://nbrienvvis.nic.in/Database/1_2031.aspx

		<p>4. Copper Url: http://nbrienvs.nic.in/Database/1_2032.aspx</p> <p>5. Lead Url: http://nbrienvs.nic.in/Database/1_2033.aspx</p> <p>6. Mercury Url: http://nbrienvs.nic.in/Database/1_2034.aspx</p> <p>7. Arsenic Url: http://nbrienvs.nic.in/Database/1_2035.aspx</p> <p>8. Zinc Url: http://nbrienvs.nic.in/Database/1_2136.aspx</p> <p>9. Iron Url: http://nbrienvs.nic.in/Database/1_2140.aspx</p> <p>10. Metal/Metalloid Url: http://nbrienvs.nic.in/Database/1_2160.aspx</p> <p>11. Endosulfan Url: http://nbrienvs.nic.in/Database/1_2038.aspx</p> <p>12. Lindane Url: http://nbrienvs.nic.in/Database/1_2037.aspx</p> <p>13. Neonicotinoids Url: http://nbrienvs.nic.in/Database/1_2126.aspx</p> <p>14. Organophosphate Url: http://nbrienvs.nic.in/Database/1_2147.aspx</p> <p>15. Carbofurans Url: http://nbrienvs.nic.in/Database/1_2148.aspx</p> <p>16. Nitrogen fertilizer Url: http://nbrienvs.nic.in/Database/1_2199.aspx</p> <p>17. Ozone Url: http://nbrienvs.nic.in/Database/1_2044.aspx</p> <p>18. Fluoride Url: http://nbrienvs.nic.in/Database/1_2043.aspx</p> <p>19. Biogas Url: http://nbrienvs.nic.in/Database/1_2042.aspx</p> <p>20. Green House Gases Url: http://nbrienvs.nic.in/Database/1_2041.aspx</p> <p>21. Sulphurdioxide Url: http://nbrienvs.nic.in/Database/1_2040.aspx</p> <p>22. Nitrogen Oxides Url: http://nbrienvs.nic.in/Database/1_2039.aspx</p> <p>23. Carbon Monoxide Url: http://nbrienvs.nic.in/Database/1_2462.aspx</p> <p>24. Hydrocarbon Url: http://nbrienvs.nic.in/Database/1_2465.aspx</p> <p>25. Bioremediation Url: http://nbrienvs.nic.in/Database/1_2047.aspx</p> <p>26. Indoor Air Pollutant Url: http://nbrienvs.nic.in/Database/1_2048.aspx</p> <p>27. Nanoparticles Url: http://nbrienvs.nic.in/Database/1_2049.aspx</p> <p>28. Acid Rain Url: http://nbrienvs.nic.in/Database/1_2050.aspx</p> <p>29. Smog Url: http://nbrienvs.nic.in/Database/1_2051.aspx</p> <p>30. Waste Land Management through Plants Url: http://nbrienvs.nic.in/Database/1_2063.aspx</p> <p>31. Role of Plants in CO₂ Sequestration Url: http://nbrienvs.nic.in/Database/1_2162.aspx</p> <p>32. Climate Change-CO₂ Enrichment Url: http://nbrienvs.nic.in/Database/1_2163.aspx</p> <p>33. Climate Change – Methane Url: http://nbrienvs.nic.in/Database/1_2164.aspx</p> <p>34. Suspended Particulate Matter Url: http://nbrienvs.nic.in/Database/1_2463.aspx</p> <p>35. Emerging Pollutants</p>
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		<p>Url: http://nbrienvis.nic.in/Database/Emerging_Pollutants_11866.aspx</p> <ul style="list-style-type: none"> ➤ Annual Progress Reports (APR) Url: http://www.nbrienvis.nic.in/Database/Annual_Progress_Reports_11847.aspx
8.	Photo gallery	<ul style="list-style-type: none"> ➤ 2nd Programme Of GSDP “Pollution Monitoring: Soil Pollution” Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1059 ➤ 2nd Programme Of GSDP “Greenbelt Development For Industries” Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1060 ➤ Inauguration Function of GSDP Courses on SPM & GBD Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1061 ➤ Valedictory Programme Of GSDP Courses on GBD & SPM Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1062 ➤ Inaugural Programme of GSDP Course on PTC Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1063 ➤ National Science Day 2021 Url: http://www.nbrienvis.nic.in/viewPhotos.aspx?Cat_Id=1064
9.	Publication	<p>Addition of 12 Books</p> <ul style="list-style-type: none"> ➤ Plant Responses to Air Pollution Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7801&LinkId=739&Year=2020 ➤ Environmental Pollution and Remediation Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7815&LinkId=739&Year=2020 ➤ Plant Responses to Soil Pollution Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7851&LinkId=739&Year=2020 ➤ Environment and Development: Basic Principles, Human Activities, and Environmental Implications focuses Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7852&LinkId=739&Year=2020 ➤ Photosynthesis, Productivity, and Environmental Stress Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7877&LinkId=739&Year=2020 ➤ Phytoremediation of Contaminated Soil and Water Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7878&LinkId=739&Year=2020 ➤ Phytomanagement of Polluted Sites Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7879&LinkId=739&Year=2020 ➤ The Handbook of Environmental Remediation Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7880&LinkId=739&Year=2020 ➤ Environmental Metabolomics Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7800&LinkId=739&Year=2020 ➤ Climate Change and Air Pollution Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7799&LinkId=739&Year=2020 ➤ The Elements of Environmental Pollution Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=9917&LinkId=739&Year=2021 ➤ Environmental and Pollution Science Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=9918&LinkId=739&Year=2021 <p>Addition of 6 Theses</p> <ul style="list-style-type: none"> ➤ A Study On Assessment And Amelioration Of Polluted Soils Through Phytoremediation Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7853&LinkId=738&Year=2020 ➤ Phytoremediation of contaminated soil with the locally occurring species in Haridwar, Uttrakhand Url: http://nbrienvis.nic.in/PublicationDetails.aspx?SubLinkId=7854&LinkId=738

		<p>&Year=2020</p> <ul style="list-style-type: none"> ➤ Biomonitoring of soil pollution using plant species in and around Mysore Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7813&LinkId=738&Year=2020 ➤ Potential of Selected Algae in Bioremediation of Waste Water Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7814&LinkId=738&Year=2020 ➤ Environmental Pollution through E Waste Burning and its Impact on Soil Air and Plants Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7807&LinkId=738&Year=2020 ➤ Studies on air pollution tolerance and carbon sequestration potential of tree species growing in urban areas of Visakhapatnam Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7808&LinkId=738&Year=2020 <p>Addition of 4 Newsletters</p> <ol style="list-style-type: none"> 1. Trichoderma for bioremediation and phytoremediation in sustainable soil and plant health management Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7871&LinkId=740&Year=2020 2. Phytoremediation as a Tool to Combat Cyanide Pollution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7872&LinkId=740&Year=2020 3. Phytoremediation Potential of Perennial Grasses of Family Poaceae Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=8899&LinkId=740&Year=2020 4. Role of air pollution and climate change on interplay of plant-insect interaction Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=9899&LinkId=740&Year=2021 <p>Addition of 6 Videos</p> <ul style="list-style-type: none"> ➤ Rare Indoor Plants (India) with prices Plant Haul Winter Flowering Plant Haul Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7895&LinkId=1385&Year=2020 ➤ 5 Air Purifying Indoor Plants for Styling Your Home Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7894&LinkId=1385&Year=2020 ➤ Air pollution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7903&LinkId=1385&Year=2020 ➤ Pollution Indicators Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7902&LinkId=1385&Year=2020 ➤ A NASA study explains how to purify air with house plants Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=9915&LinkId=1385&Year=2021 ➤ How to Grow Fresh Air Inside Your House Amidst Pollution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=9914&LinkId=1385&Year=2021 <p>Addition of 9 Presentation</p> <ul style="list-style-type: none"> ➤ Indian Science Congress, 3-7 Jan, 2020 Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=5799&LinkId=1397&Year=2020 ➤ Bioremediation Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7809&LinkId=1397&Year=2020 ➤ Bioindicator Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7844&LinkId=1397&Year=2020 ➤ Phytoremediation Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7837&LinkId=1397
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		<ul style="list-style-type: none"> ➤ 7&Year=2020 5 R- Reduce, Reuse, Recycle, Refuse, Recover Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7875&LinkId=1397&Year=2020 ➤ Environmental Pollution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7874&LinkId=1397&Year=2020 ➤ Pollution ,effects, causes .measures and statistical solution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7906&LinkId=1397&Year=2020 ➤ Environmental Pollution and Control Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=9921&LinkId=1397&Year=2021 ➤ Phytoremediation - Using Plants To Clean Up Our Environment Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=9920&LinkId=1397&Year=2021 <p>Addition of 6 Case Studies</p> <ul style="list-style-type: none"> ➤ Ambient Air Quality in an Urban Area and its effects on Plants and Human Beings: A Case Study of Tiruchirappalli, India Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7859&LinkId=741&Year=2020 ➤ Leaf demography and growth analysis to assess the impact of air pollution on plants: A case study on alfalfa exposed to a gradient of sulphur dioxide concentrations Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7858&LinkId=741&Year=2020 ➤ Review of Air Quality Monitoring: Case Study of India Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7857&LinkId=741&Year=2020 ➤ Impact and extent of ground water pollution: A case study of rural area in Punjab State (India) Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7856&LinkId=741&Year=2020 ➤ Pollution assessment and spatial distribution of roadside agricultural soils: a case study from India Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7900&LinkId=741&Year=2020 ➤ Phytoremediation for urban landscaping and air pollution control—a case study in Trivandrum city, Kerala, India Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7899&LinkId=741&Year=2020 <p>Addition of 8 Journals</p> <ul style="list-style-type: none"> ➤ Environmental Nanotechnology, Monitoring and Management Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7803&LinkId=1399&Year=2020 ➤ Environment, Development and Sustainability Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7805&LinkId=1399&Year=2020 ➤ An Interdisciplinary, International Journal Devoted to the Description, Causes and Implications of Climatic Change Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7804&LinkId=1399&Year=2020 ➤ Journal of Environmental Studies and Sciences (Vol. 10) Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7821&LinkId=1399&Year=2020 ➤ Environmental Development Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7820&LinkId=1399&Year=2020 ➤ Plant Systematics and Evolution Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7850&LinkId=1399
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Factsheet of 2020-21 (as on 31st March 2021) on Activities of ENVIS-RP-NBRI on "Plants and Pollution"

		<p>9&Year=2020</p> <ul style="list-style-type: none"> ➤ Purification of Indoor Air from Pollutants by Areca Palm (Chrysalidocarpuslutescens L.) Treated with some Non-Enzymatic Antioxidants Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7849&LinkId=1399&Year=2020 ➤ Air Pollution and Plant Ecosystems Url:http://nbrienvs.nic.in/PublicationDetails.aspx?SubLinkId=7847&LinkId=1399&Year=2020
10.	Latest News	<p>Addition of 9 Latest News</p> <ul style="list-style-type: none"> ➤ Environment Minister participates in 6th BRICS Environment Ministers' Meeting Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9746&Year=2020 ➤ NHAI launches 'Harit Path' a mobile app to monitor plantation along national highways Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9762&Year=2020 ➤ Carbon emissions for 2020 to come down by 8% due to lockdown: Environment ministry Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9793&Year=2020 ➤ Experts welcome UN Secretary General's advice to India to phase out fossil fuel for combating climate change Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9792&Year=2020 ➤ Draft EIA in line with green rules, court rulings: Prakash Javadekar, Environment Minister Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9791&Year=2020 ➤ Build a better future with blue skies for all, UN urges, marking first International Day of Clean Air Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9790&Year=2020 ➤ Delhi Environment Minister Gopal Rai launches anti-cracker campaign Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9825&Year=2020 ➤ Javadekar asks industry leaders to work with govt in combating climate change Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=9829&Year=2020 ➤ Jaishankar met COP26 president-designate Alok Sharma, discuss India's Green Growth initiatives Url:http://nbrienvs.nic.in/ViewGeneralLatestNews.aspx?Id=11854&Year=2021
11.	Upcoming Events	<p>Addition of 26 Upcoming Events</p> <ul style="list-style-type: none"> ➤ Online Competition on "COVID-19 Pandemic and Environment" Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=7734&Year=2020 ➤ 9th World Conference on Earth & Environmental Science Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9739&Year=2020 ➤ 3rd Annual Congress on Environmental Pollution and Health Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9738&Year=2020 ➤ 9th International Summit on Global Warming and Environmental Science Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9737&Year=2020 ➤ 10th International Conference on Environment and Climate Change Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9761&Year=2020 ➤ 9th World Climate Congress & Expo Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9760&Year=2020 ➤ 18th Global Recycling Expo Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9759&Year=2020 ➤ Live Webinar on the "Occasion of World Ozone day-2020" Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9772&Year=2020 ➤ 17th World Congress and Expo on Recycling Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9789&Year=2020 ➤ 4th World Congress on Environmental Toxicology Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9788&Year=2020 ➤ 17th World Congress on Recycling and E-waste Management Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9787&Year=2020 ➤ ICEEEB 2020: 14. International Conference on Environment, Ecology, Energy and Biotechnology Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9811&Year=2020 ➤ ICERT 2020: 14. International Conference on Environmental Remediation and Technology

Factsheet of 2020-21 (as on 31st March 2021) on Activities of ENVIS-RP-NBRI on "Plants and Pollution"

		<ul style="list-style-type: none"> ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9810&Year=2020 ICERD 2020: 14. International Conference on Environmental Remediation and Development ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9809&Year=2020 ICEES 2020: 14. International Conference on Environmental and Ecological Systems ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9816&Year=2020 ICEEWM 2020: 14. International Conference on Environment, Energy and Waste Management ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=10837&Year=2020 ICESB 2020: 14. International Conference on Environmental Systems and Biotechnology ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=10836&Year=2020 ICEEB 2021: 15. International Conference on Environment, Ecology and Biotechnology ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9808&Year=2021 ICCES 2021: 15. International Conference on Climate and Environmental Sciences ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=9817&Year=2021 ICCCC 2021: 15. International Conference on Climatology and Climate Change ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=10839&Year=2021 ICEP 2021: 15. International Conference on Environment and Pollution ➤ Url:http://nbrienvs.nic.in/ViewPastEvent.aspx?Id=10838&Year=2021 8th International Conference on Pollution Control & Sustainable ➤ Url:http://nbrienvs.nic.in/ViewEvents.aspx?Id=9807&Year=2021 13th World Congress and Expo on Recycling ➤ Url:http://nbrienvs.nic.in/ViewEvents.aspx?Id=9806&Year=2021 ICPEP 2021: 15. International Conference on Plants and Environmental Pollution ➤ Url:http://nbrienvs.nic.in/ViewEvents.aspx?Id=9805&Year=2021 10th World Conference on Climate Change ➤ Url:http://nbrienvs.nic.in/ViewEvents.aspx?Id=11852&Year=2021 20th International Conference on Environmental Toxicology and Ecological Risk Assessment ➤ Url:http://nbrienvs.nic.in/ViewEvents.aspx?Id=11851&Year=2021
12.	Kids Center	<ol style="list-style-type: none"> 1. Addition of Video on "The Nitrogen Cycle" Url: http://nbrienvs.nic.in/KidsCentre/The_Nitrogen_Cycle_2542.aspx 2. Addition of Video on "Uses of Plants for Kids" Url:http://nbrienvs.nic.in/KidsCentre/Uses_of_Plants_for_Kids_2559.aspx 3. Addition of Video on "Air Pollutions for Kids" Url:http://nbrienvs.nic.in/KidsCentre/Air_Pollutions_for_Kids_2557.aspx 4. Addition of Video on "Soil Pollution for kids" Url: http://nbrienvs.nic.in/KidsCentre/Soil_Pollution_for_kids_3685.aspx 5. Addition of Video on "Ecosystem for Kids" Url: http://nbrienvs.nic.in/KidsCentre/Ecosystem_for_kids_3686.aspx 6. Addition of Video on "Ozone" Url: http://nbrienvs.nic.in/KidsCentre/Ozone_9747.aspx 7. Addition of Video on "Reduce, Reuse and Recycle (The 3R's)" Url:http://nbrienvs.nic.in/KidsCentre/Reduce_Reuse_and_Recycle_9768.aspx 8. Addition of Video on "Reduce, Reuse and Recycle (The 3R's)" Url:http://nbrienvs.nic.in/KidsCentre/How_Trees_Clean_the_Air_9786.aspx 9. Addition of Video on "Photosynthesis" Url:http://nbrienvs.nic.in/KidsCentre/Photosynthesis_9820.aspx
13.	Glossary	Go Green, Green Belt, Sustainability, Greenness, Sulfur Dioxide, Chlorophyll, Biomass Fuel, Carbon Monoxide (CO), Hazardous Waste, Alkalinity, Solute, Point-source pollution, Oxygen Demand, Non-point source (NPS) pollution, Base, Suspended solids, Mitigation, Mulch, Smog, Sewage, Ecology, Ecosystem, Phytoplankton, Phytotoxic, Ecological pyramid, Surface Water, Xeriscaping, Lichen, Endangered Species, Carbon credit, Waste management, Fumes, Disposable products, Industrial Waste, Natural Resources, Recycle Waste, Rainforest, Sewage Plant, Volcano, Waste, Ecological sustainability, Food chain, Freshwater, Carbon emissions, Domestic waste, Dioxins, Carbon dioxide,

Factsheet of 2020-21 (as on 31st March 2021) on Activities of ENVIS-RP-NBRI on "Plants and Pollution"

		Alternative energy sources, Air quality, Bioaccumulation, Biological oxygen demand were added Url: http://nbrienvvis.nic.in/SearchGlossary.aspx?Name=
14.	Major activity	<ul style="list-style-type: none"> ➤ ENVIS RP-NBRI celebrated ‘World Environment Day’-2020 Date: June 5, 2020 Url: http://nbrienvvis.nic.in/Database/World Environment Day-2020 7736.aspx ➤ ENVIS-RP-NBRI Celebrated World Ozone Day-2020 Date: September 16, 2020 Url: http://nbrienvvis.nic.in/ViewMajorActivity.aspx?Id=9773&Year=2020 ➤ ENVIS-RP-NBRI celebrated “National Science Day-2021” Date: February 26, 2021 Url: http://nbrienvvis.nic.in/ViewMajorActivity.aspx?Id=11848&Year=2021 ➤ ENVIS-RP-NBRI celebrated World Water Day 2021 Date: March 22, 2021 Url: http://nbrienvvis.nic.in/ViewMajorActivity.aspx?Id=11859&Year=2021
15.	Bibliography	<p>Understanding and improving Nickel, Chromium, Cadmium, Copper, Lead, Mercury, Arsenic, Zinc, Iron, Metal/Metalloid, Endosulfan, Lindane, Neonicotinoids, Organophosphate, Carbofurans, Nitrogen Fertilizer, Ozone, Fluoride, Biogas, Green House Gases, Sulfurdioxide, Nitrogen Oxide, Carbon Monoxide, Hydrocarbon, Bioremediation, Indoor Air Pollutants, Nanoparticles, Acid Rain, Smog, Waste Land Management Through Plants, Role Of Plants In CO₂ Sequestration, Climate Change-CO₂ Enrichment, Climate Change-Methane, Suspended Particulate Matter</p> <p>Url: http://nbrienvvis.nic.in/Bibliography.aspx?Name=</p>

2. Awareness Programme under ENVIS-RP-NBRI

2.1. ENVIS RP-NBRI celebrated ‘World Environment Day’-2020:

Url: <http://nbrienvvis.nic.in/Database/World Environment Day-2020 7736.aspx>

ENVIS RP-NBRI celebrated ‘World Environment Day’ on 5th June, 2020. This year, the theme is “**Biodiversity—a concern Time for Nature**”. Due to amid **COVID-19** situation, the day was celebrated through digital mode. An online competition for school children in different categories viz., Essay Writing, Poster and Cartoon was organized.

The target group was categorized into two groups

- (i.) From class 5th to 8th
- (ii.) From class 9th to 12th

On this occasion **Prof. SK Barik** Director, CSIR-NBRI addressed the importance of Biodiversity and needs of its conservation. Prof. Barik emphasized the Indian Biodiversity Hotspots and its ecological importance. ENVIS-RP releases following knowledge-based products on the occasion;

- 1) Video message from Prof. SK Barik, Director, CSIR-NBRI, Lucknow.



Url: <https://youtu.be/2D8cb-Zg03s>

2) Article on “The Role of Herbaria in the Assessment of Plant Biodiversity” by Dr. L.B. Chaudhary, Sr. Principal Scientist, CSIR-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/Herbarium_and_Plant_Biodiversity_2020.pdf

3) “सकारात्मकता: एक युद्ध- वैश्विक महामारी के विरुद्ध द्वारा इं० हरेन्द्र पाल, वरिष्ठ तकनीकी अधिकारी, वै.औ.अ.प.-राष्ट्रीय वनस्पति अनुसंधान संस्थान, लखनऊ

Url: http://nbrienvis.nic.in/WriteReadData/CMS/positive_approach_of_mind_HP_2020.pdf

4) Article on “COVID-19 : Do’s and Dont’s” by Dr. Vinay Sahu, Sr. Technical Officer, CSIR-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/Covid%2019_2020.pdf

5) Write-up on “Social Distancing” Dr. Babita Kumari, Sr. Technical Officer, CSIR-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/Social_distancing_2020.pdf

6) Article on “Change in Life” by Dr. Babita Kumari, Sr. Technical Officer, CSIR-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/change_in_life_2020.pdf

7) Poster on “Plant Biodiversity” by Mr. Sunil Tripathi, Programme Officer, ENVIS RP-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/plant_Biodiversity_poster_2020.pdf

8) Poster on “Protection against COVID-19 Virus” by Mr. Sunil Tripathi, Programme Officer, ENVIS RP-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/Protection%20against%20Covid19%20Virus_poster_2020.pdf

9) Pamphlet on “Social Distancing” by Mr. Sunil Tripathi, Programme Officer, ENVIS RP-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/Social_Distancing_poster_2020.pdf

10) Poster on “Positive approach of mind” by Mr. Diwakar Saini, Information Officer, ENVIS RP-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/positive%20approach%20of%20mind_poster_2020.pdf

11) Poster on “Change in Life” by Mr. Diwakar Saini, Information Officer, ENVIS RP-NBRI, Lucknow.

Url: http://nbrienvis.nic.in/WriteReadData/CMS/change_in_life_poster_2020.pdf

Result of the online competition conducted by ENVIS-RP-NBRI on the occasion of World Environment Day-2020









Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=7739&Year=2020>

2.2. ENVIS-RP-NBRI Celebrated World Ozone Day-2020:

Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=9773&Year=2020>

ENVIS-RP-NBRI Celebrated “World Ozone Day-2020” on 16th September 2020. On this occasion ENVIS-RP-NBRI organised a Webinar on the topic “Ozone for life: 35 years of ozone layer protection” by **Dr. Pankaj Kumar Srivastava**, Principal Scientist & ENVIS-Coordinator. Dr. Srivastava emphasised on the different aspects like how ozone layer helping to preserve life on the planet, Depletion of ozone layer, Montreal Protocol, Ozone Depleting Substances (ODS) and their uses in daily life, current status of the ozone hole. The webinar was live streaming in different online platform like Google Meet, Facebook and YouTube. A total number of **224 participants** were registered from 13 States and 62 Institutes to attend the webinar from all over India. Feedbacks of all the participants were obtained and they were awarded with e-certificates and participation.

➤ **Picture Gallery:**

 <p>Advertisement to attend live Webinar on World Ozone Day-2020</p>	 <p>Get an E-Certificate for their active participation</p>
 <p>YouTube Live Stream</p>	 <p>Facebook Live Stream</p>
 <p>Participants attended webinar through Google Meet</p>	
 <p>Dr. Pankaj Kumar Srivastava presented webinar on the occasion of World Ozone day-2020</p>	
 <p>Participants attended the webinar</p>	
 <p>Team ENVIS-RP-NBRI monitoring the events</p>	

2.2. ENVIS-RP-NBRI celebrated “National Science Day-2021”:

Url: <http://nbrienviis.nic.in/ViewMajorActivity.aspx?Id=11848&Year=2021>

On this occasion ENVIS-RP-NBRI celebrated ‘National Science Day’ on 26th February, 2021 at Kendriya Vidyalaya, Gomti Nagar, Lucknow. This year, the theme is "Future of Science, Technology & Innovation (STI): Impacts on Education, Skills, and Work".

On this occasion **Dr. Pankaj Kumar Srivastava**, Coordinator, ENVIS-RP-NBRI delivered interactive session on the importance of “Creativity & Innovation” to the Science Students of Kendriya Vidyalaya, Gomti Nagar, Lucknow.

Mr. Sunil Tripathi, Programme Officer interacted with the students and gave detailed account of “Green Planner App” developed by ENVIS-RP-NBRI including information about air pollution mitigant plants for different premises viz; Road Side, Road Divider, Indoor and Greenbelt.

The programme had included interactive displays on “Plants as Indicators of Pollution”, “Plants for Greenbelts”, “Arsenic Pollution & its amelioration by plants” and distributed ENVIS Newsletters along with Brochure.

15 indoor plants viz. Syngonium sp., Dracaena marginata, Ficus elastica, Dyspsislutescens, Sansevieria marginata, Ficus longifolia, Thuja compacta, Rhoeo discolor, Pedilanthus sp., Rhaps palm, Aspidistra sp., Chlorophytum comosum, Sansevieria trifasciata, Bougainvillea sp., and Bauhinia blakeana were showcased to students and briefed them about their role in mitigating indoor air pollutants.

Mr. Diwakar Saini, **Ms. Karishma Srivastava** and **Mr. Akash Tiwari** were also participated in the event and showcased ENVIS-RP-NBRI website to students.

Dr. C.B.P Verma, Principal, Kendriya Vidyalaya, Gomti Nagar, Lucknow also addressed the students.

➤ Picture Gallery:



A Interactive Lecture given by Dr. Pankaj Kumar Srivastava, Coordinator, ENVIS-RP-NBRI on the importance of "Creativity & Innovation"



Dr. Pankaj Kumar Srivastava, Coordinator, ENVIS-RP-NBRI interacted with K.V. Students



Mr. Sunil Tripathi, Programme Officer interacted with the students & gave detailed account of "Green Planner App" developed by ENVIS-RP-NBRI



Distribution of ENVIS-Newsletter by ENVIS-RP-NBRI Team



Interactive Display of Educational Posters & Indoor plants

2.2. ENVIS-RP-NBRI celebrated World Water Day 2021:

Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11859&Year=2021>

ENVIS RP-NBRI celebrated 'World Water Day' on 22nd March, 2021. This year's theme is "valuing water". On this occasion Prof. S.K. Barik Director, CSIR-NBRI addressed the importance of water and raised awareness of the global water crisis. He emphasized the eco-friendly management of polluted water by planning trees.

On this occasion Dr. Anju Patel Scientist, CSIR-NBRI focused on the importance of rainwater harvesting and efficient utilization of available resource i.e. in a sustainable manner. ENVIS-RP-NBRI also conducted awareness among the masses by creating a video of the Gomti river and captured the mass attention.

Video message from Prof. SK Barik, Director, CSIR-NBRI, Lucknow



Link: <https://youtu.be/JjudVSBWYV0>

3. GREEN SKILL DEVELOPMENT PROGRAMME:

3.1. GSDP Advertisement on ENVIS-RP-NBRI Website



पर्यावरण, वन एवं जलवायु परिवर्तन मंत्रालय
Ministry of Environment, Forest & Climate Change
हरित कौशल विकास कार्यक्रम
GREEN SKILL DEVELOPMENT PROGRAMME (GSDP)

In line with the Skill India Mission, Ministry of Environment, Forest & Climate Change (MoEF&CC) has launched a Green Skill Development Programme (GSDP). Following courses/training programmes are being offered by CSIR-National Botanical Research Institute (NBRI), Lucknow:

S. No.	Course Name	Seats	Duration	Minimum Eligibility
1.	Pollution Monitoring: Soil Pollution	20	200 hrs / 30 Days	Science Graduate / Diploma in Engineering
2.	Greenbelt development for industries	30	200 hrs / 30 Days	Science Graduate
3.	Plant Tissue Culture Techniques and its application	25	320 hrs / 45 Days	Science Graduate

APPLY ONLINE at <http://gsdp-envis.gov.in/Default3.aspx>

Last date of online submission of application - 7th January 2020

> Commencement of Courses: January 2020
> Courses are regular and fulltime.

> Charges: No fees.
> Staying arrangement shall be offered to selected candidates without any charge.

Venue : CSIR-National Botanical Research Institute (NBRI), Rana Pratap Marg, Lucknow, Uttar Pradesh 226001

For further Details :

Dr. Vivek Srivastava
(ENVIS-Coordinator)
(Mob.) +91-9453557975

Dr. Babita Kumari
(ENVIS-Co-coordinator)
(Mob.) +91-9450400152

Mr. Sunil Tripathi
(ENVIS-Programme Officer)
(Mob.) +91-9415727881

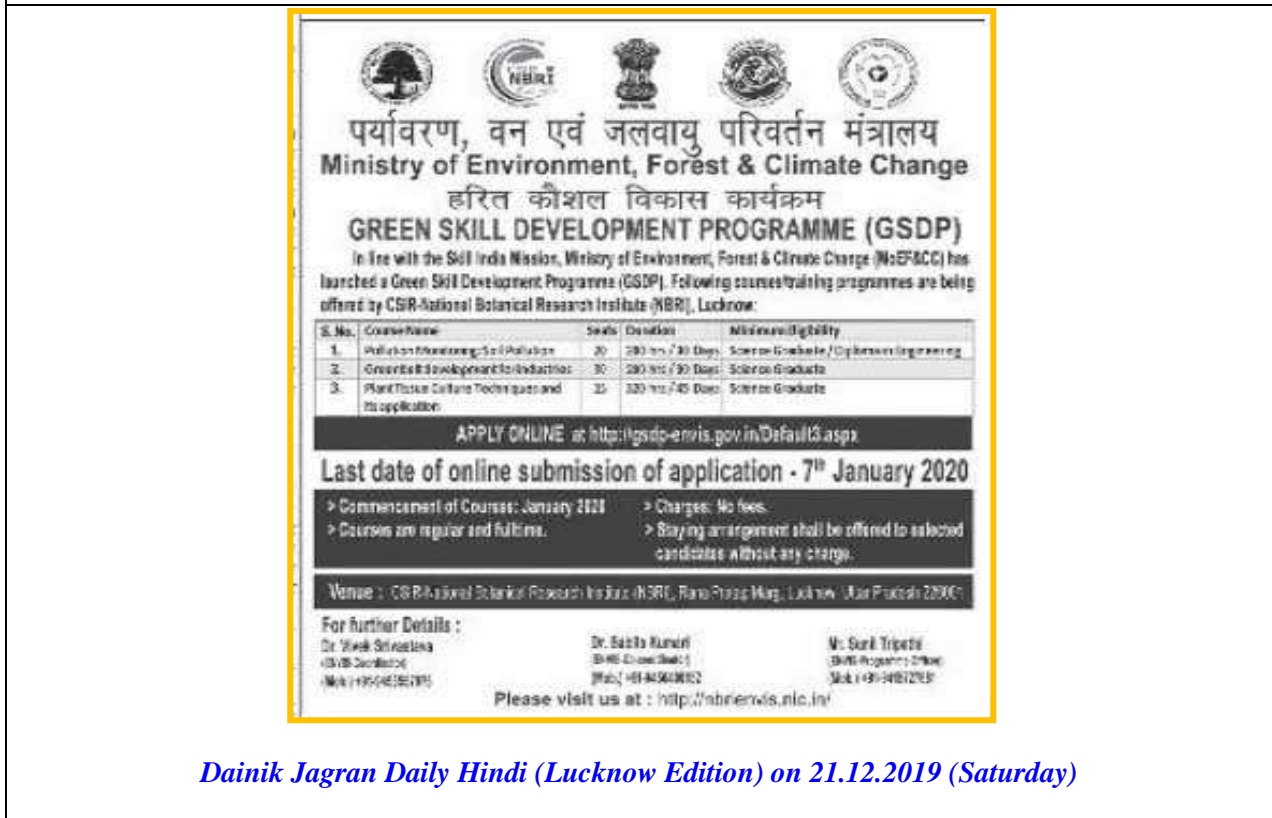
Please visit us at : <http://nbrienvis.nic.in/>

Link: <http://nbrienvis.nic.in/ViewPastEvent.aspx?Id=5728&Year=2020>

3.2. GSDP Advertisement Published in Newspapers:











Dainik Jagran Daily Hindi (National Edition) on 22.12.2019 (Sunday)



Dainik Jagran Daily Hindi (Lucknow Edition) on 21.12.2019 (Saturday)

3.3. Screening-cum-advisory-committee for Green Skill Development Programme (GSDP) CSIR-National Botanical Research Institute, Lucknow(January 30th, 2020)

Sl. No.	Name	Designation
1.	Prof. Pramod Tondon 	Chief Executive Officer Biotech Park, Lucknow as Chairman ,
2.	Mr. Pankaj Kumar 	General Manager (HR) Northern Region Headquarters, NTPC Limited as Co-Chairman
3.	Dr. D.K.Upreti 	Emeritus Scientist CSIR-NBRI, Lucknow
4.	Dr. S.K Tewari 	Chief Scientist CSIR-NBRI, Lucknow
5.	Mr. Mukesh Mittal 	Asst. Vice President (Safety & Environment) Hindalco Industries
6.	Mr. Rajendra Singh 	Environmental Engineer U.P. Pollution Control Board Govt. of U.P, Lucknow
7.	Mr. Saurabh Srivastava 	Manager Certification & Agro Operations Organic India Pvt.Ltd., Barabanki
8.	Dr. Sitaram Taigor 	Environmental Specialist-Ganga U.P State Ganga River Conservation Agency Urdan Development Department Govt. of U.P, Lucknow
9.	Dr. Devendra Kumar Soni 	Scientist 'E', Central Pollution Control Board Regional Directorate (North), Lucknow
10.	Dr. Vivek Srivastava 	Coordinator (ENVIS-RP-NBRI) CSIR-NBRI, Lucknow as Convenor
11.	Dr. Babita Kumari 	Co-Coordinator (ENVIS-RP-NBRI) CSIR-NBRI, Lucknow
12.	Mr. Sunil Tripathi 	Programme Officer (ENVIS-RP-NBRI) CSIR-NBRI, Lucknow as Co-Convenor

➤ **Picture Gallery:**



Dr. Vivek Srivastava, Coordinator ENVIS-RP-NBRI briefed about the applications received from various part of the country for GSDP Courses to the advisory committee members



Meeting of Screening cum Advisory Committee chaired by Prof. Pramod Tondon, CEO Biotech Park



Discussion about the selection criteria with the committee members



Finalization of the list of Selected, waitlisted and rejected candidates applied for the course



Prof. S.K. Barik, Director, CSIR-NBRI during the advisory committee meeting

3.4. Budget Allocation for GSDP Courses:

Sl. No.	GSDP Course Sanctioned	Total Amount Sanctioned (in INR)	Total Amount Released	Sanction Order No. with date	Shortfall, if any with reason.
1.	Plant Tissue Culture and its application	₹13,75,000/-	₹13,75,000/-	11/2/2020-Eco.D (Pt-1) dt. 24.08.20	Not Applicable
2.	Pollution Monitoring: Soil Pollution	₹10,10,000/-	₹10,10,000/-	11/2/2020-Eco.D (Pt-1) dt. 24.08.20	
3.	Greenbelt Development for Industries	₹13,40,000/-	₹13,40,000/-	11/2/2020-Eco.D (Pt-1) dt. 24.08.20	

3.5. Applications received and number of Selected, waitlisted and rejected candidates:

Sl. No.	GSDP Course Sanctioned	No. of Applications Received	No. of Selected candidates	No. of Waitlisted Candidates	No. of Rejected Candidates
1.	Plant Tissue Culture and its application	78	25	07	46
2.	Pollution Monitoring: Soil Pollution	52	20	04	28
3.	Greenbelt Development for Industries	57	30	05	22
Total		187	75	16	96

3.6. Green Skill Development Programme ENVIS-RP-NBRI Courses:

Under the administrative and financial support by the Ministry of Environment, Forest & Climate Change (MoEF&CC), ENVIS-RP-NBRI has offered three courses namely

“**Pollution Monitors :Soil Pollution**”, “**Greenbelt Development for Industries**” and “**Plant Tissue Culture Techniques and its Application**” to implement Green Skill Development Programme (GSDP). These Courses were for teachers/students/researchers/stake holders/entrepreneurs etc. The Certificates has been awarded to successful candidates on completion of the courses.

➤ **Glimpse of the Courses:**

1. Inauguration Function of GSDP courses on Greenbelt Development for Industries and Pollution Monitoring: Soil Pollution
2. Valedictory Programme of GSDP courses on Greenbelt Development for Industries and Pollution Monitoring: Soil Pollution
3. Inauguration Function of GSDP course on Plant Tissue Culture and its Applications
4. Valedictory Programme of GSDP Course on “Plant Tissue Culture Techniques and its Applications”

➤ **Inauguration Function of GSDP courses on Greenbelt Development for Industries and Pollution Monitoring : Soil Pollution:**

Date: December 22, 2020

Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11840&Year=2020>

National level **Green Skill Development Programmes (GSDP)** One Month Certificate Courses on “**Greenbelt development for Industries**” and “**Pollution monitoring: Soil pollution**” at ENVIS-Centre, CSIR-National Botanical Research Institute, Lucknow.

Under the aegis of Green Skill Development Programme (GSDP) of Ministry of Environment, Forest and Climate Change (MoEF&CC), Govt. of India CSIR-National Botanical Research Institute (NBRI) is going to organize one month certificate courses on

(i) Greenbelt development for industries (ii) Pollution monitoring: Soil pollution

Commencing from 22nd December, 2020 to 25th January 2021. GSDP is an initiative by MoEF&CC to empower Indian youth to gain employment or self employment. MoEF&CC and National Skill Development Council have selected CSIR-NBRI to conducting these courses. Inaugural function of both the courses took place at CSIR-NBRI, Lucknow. On the occasion of the function, **Dr Richa Rai**, Senior Scientist, NBRI welcomed Chief Guest and all the participants and provided an overview of these two courses. **Prof. S.K. Barik**, Director, CSIR-NBRI highlighted importance of these courses and briefed about the success stories of alumni of these courses. Prof. Barik also narrated about the expectations of Honourable, Cabinet Minister of MoEF&CC from GSDP courses. Ministry has included these two courses ((i) Greenbelt development for industries (ii) Pollution monitoring: Soil pollution) among active 25 courses of GSDP across the country. **Dr. Anju Patel**, Scientist CSIR-NBRI introduced 50 participants that were selected from different parts of the country viz., Bihar, Jharkhand, Maharashtra, Madhya Pradesh, Orissa and Uttar Pradesh by a National Level Screening and Advisory Committee.

Mr. Yashvir Singh, IES, Economic Advisor of MoEF&CC has also joined the function and shared his views through virtual platform. He encouraged the participants to take part keenly in each and every activity of these two courses. So that participants, can deal with problems related with soil pollution and greenbelt design for industries.

Chief Guest of the Inaugural function was Honorable Vice Chancellor, **Prof. Sanjay Singh** of Babasaheb Bhimrao Ambedkar University (BBAU), Lucknow. Prof. Singh highlighted necessity and importance of these courses in the present scenario and emphasized on the popularization of such courses to cover large number of unemployed educated youths. He also encouraged participants to participate with full zeal and enthusiasm in one-month certificate course and also congratulated CSIR-NBRI for organizing such courses of youth empowerment.

Prof. S.K. Barik, Director, CSIR-NBRI congratulate **Dr. Pankaj Kumar Srivastava**, Principal Scientist & Coordinator ENVIS, CSIR-NBRI and whole team of ENVIS-RP-NBRI (Dr. Anju Patel Scientist & Co-coordinator ENVIS, **Mr. Sunil Tripathi** Programme Officer, **Mr. Diwakar Saini** Information Officer, **Ms. Karishma Srivastava** IT-Officer and **Mr. Akash Tiwari** Data Entry Operator) to conduct these programmes in COVID-19 scenario.

➤ **Picture Gallery:**



GSDP Participants along with Faculty member and ENVIS Staff



Introduction of GSDP participants



Inauguration of GSDP courses at CSIR-NBRI



*Release of the course manual
Greenbelt Development for Industries*



*Release of the course manual:
Pollution Monitoring: Soil Pollution*



*Prof. S.K. Barik, Director,
CSIR-NBRI addressing to the audience*



*Prof. Sanjay Singh, Vice Chancellor of BBAU,
addressing to GSDP participants and audience*

➤ Media Gallery:



Hungama Times, 23rd December 2020

(<https://www.youtube.com/watch?v=bTJWb6gYPd4&feature=youtu.be>)

ABT News, 25th December 2020

(<https://www.youtube.com/watch?v=fmQId2U5AOg&feature=youtu.be>)



AVP 24 News, 24th December 2020 (<https://www.youtube.com/watch?v=HgrqmG3Ipis&feature=youtu.be>)



HS Live News, 22nd December 2020
(<http://www.hslivenews.in/archives/13815>)



Nayalook News, 23rd December 2020
(<https://www.nayalook.com/csir-national-botanical-research-institute-launches-green-skill-development-program-at-national-level/>)



Samna Activist News, 23rd December 2020
(<http://www.samnaactivist.com/training-program-started-in-nbri-information-will-be-given-about-this/>)

➤ **Pollution Monitors :Soil Pollution**

Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11842&Year=2020>

About 2nd Programme of GSDP“Pollution Monitoring: Soil Pollution”

In the second GSDP programme of CSIR-NBRI “Pollution Monitoring: Soil Pollution”, A total of 52 candidates have been applied for the course online and they were screened by the Advisory Committee of GSDP-NBRI. The members of Advisory Committee are from Biotech Park, NTPC, Hindalco, CPCB, UPPCB, Organic India Pvt. Ltd., Ganga River Conservation Authority, U.P. and CSIR-NBRI. After the screening, 20 candidates were called for the course and 08 have been registered. Under pandemic situation (due to COVID-19), All the necessary precautionary steps have been followed and 07 candidates successfully completed the course and awarded with certificates.

➤ **Picture Gallery:**



Lecture by the experts during the course



Practical sessions during the course



Field visit during the course



Assessment during the course

➤ **Greenbelt Development for Industries**

Url: <http://nbrienvs.nic.in/ViewMajorActivity.aspx?Id=11843&Year=2020>

About 2nd Programme of GSDP “Greenbelt Development for Industries”

In the second GSDP programme of CSIR-NBRI “Pollution Monitoring: Soil Pollution”, A total of 52 candidates have been applied for the course online and they were screened by the Advisory Committee of GSDP-NBRI. The members of Advisory Committee are from Biotech Park, NTPC, Hindalco, CPCB, UPPCB, Organic India Pvt. Ltd., Ganga River Conservation Authority, U.P. and CSIR-NBRI. After the screening, 20 candidates were called for the course and 08 have been registered. Under pandemic situation (due to COVID-19), All the necessary precautionary steps have been followed and 07 candidates successfully completed the course and awarded with certificates.

➤ **Picture Gallery:**



Lecture by the experts during the course



Practical sessions during the course



Field visit during the course



Assessment during the course

➤ **Valedictory Programme of GSDP courses on Greenbelt Development for Industries and Pollution Monitoring : Soil Pollution**

Url: <http://nbrienviis.nic.in/ViewMajorActivity.aspx?Id=11845&Year=2021>

Two one-month long certificate courses on ‘**Greenbelt Development for Industries**’ and ‘**Pollution Monitoring: Soil Pollution**’ under Green Skill Development Programme (GSDP) of Ministry of Environment, Forest & Climate Change (MoEF&CC), Govt. of India have been concluded by ENVIS Centre of CSIR-NBRI, Lucknow. The programme was commenced on December 22nd, 2020 at NBRI. The Valedictory Function of the programme has been organized by the ENVIS-RP-Centre of NBRI on January 25th, 2021 in the auditorium of NBRI.

A total of 50 participants were selected from different parts of the country viz., Bihar, Jharkhand, Maharashtra, Madhya Pradesh, Odisha and Uttar Pradesh by a National Level Screening Committee.

After the screening, 20 participants have been registered for **Greenbelt Development for Industries** and 8 participants were for **Pollution Monitoring: Soil Pollution**. Out of these registered participants, 17 in “**Greenbelt Development for Industries**” and 7 in “**Pollution Monitoring: Soil Pollution**” have been successfully completed the course and awarded with the certificates. Both the courses has been conducted for 200 hrs (comprising of 80hrs of theory and 120 hrs of practical classes).

Prof. SK Barik, Director, NBRI has given the detailed account of Green Skill Development Programme under the initiative of Skill India Mission of Hon’ble Prime Minister of India. **Dr. Pankaj Kumar Srivastava**, Principal Scientist & Coordinator(ENVIS-RP) has briefed the report of both the courses ran for a month at the institute.

Dr. Devesh Chaturvedi, Additional Chief Secretary (Agriculture), Govt. of U. P. addressed the audience as the Chief Guest, and emphasized the importance of developing skills among the educated unemployed youths of the country. The Chief Guest appreciated the efforts of NBRI and congratulated for organizing these certificate courses for youths. Dr. Devesh underlined the significance of monitoring and assessment of soil pollution, and importance of scientifically designed greenbelts around the polluting industries.

Dr. Ajit Prakash, Director (Agriculture), Govt. of U. P., as the Guest of Honour in the function, elaborated the connectivity of the programme with its usefulness to protect country’s soil ecosystem from soil pollution with special reference to agriculture. At the end, **Dr. Anju Patel**, Scientist & Co-coordinator(ENVIS-RP) proposed vote of thanks.

➤ **Picture Gallery:**



Feedback by the GSDP Participants



Prof. S.K. Barik, Director CSIR-NBRI addressing to the audience



Dr. Devesh Chaturvedi, Additional Chief Secretary (Agriculture), Govt. of U. P. addressing the audience



Dr. Ajit Prakash, Director (Agriculture), Govt. of U. P. addressing to the audience



Dr. Pankaj Kumar Srivastava, Principal Scientist & Coordinator(ENVIS-RP) has briefed the report of both the courses



Dr. Anju Patel, Scientist & Co-coordinator(ENVIS-RP) proposing vote of thanks



Pollution Monitoring: Soil Pollution Certificate distribution to the successful participants



Greenbelt Development for Industries Certificate distribution to the successful participants



Director CSIR-NBRI Prof. S.K.Barik presented a pot of plant to the Guest of Honour Dr. Devesh Chaturvedi, Additional Chief Secretary (Agriculture), Govt. of U. P.



Director CSIR-NBRI Prof. S.K.Barik presented a pot of plant to the Guest of Honour Dr. Ajit Prakash, Director (Agriculture), Govt. of U. P.



Group Photo of the participants

➤ Media Gallery:



➤ Plant Tissue Culture Techniques and its Applications

Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11864&Year=2021>

About 1st Programme of GSDP “Plant Tissue Culture Techniques and its Applications”

In the first GSDP programme of CSIR-NBRI “Plant Tissue Culture Techniques and its Applications”, 130 candidates have been applied online for the course and they were screened by the Advisory Committee of GSDP-NBRI. Advisory Committee has been from **Biotech Park, NTPC, Hindalco, CPCB, UPPCB, Organic India Pvt. Ltd., Ganga River Conservation Authority, U.P. and CSIR-NBRI**. After the screening, 25 candidates were called for the course and 4 candidates were on the waitlist. 14 were registered because of the pandemic situation (due to COVID-19), All the necessary Covid-19 precautionary protocol have been followed and 12 candidates successfully completed the course and awarded with certificates.

➤ Picture Gallery:



Lecture by the experts during the course



Practical sessions during the course





Field visit during the course



Assessment during the course

➤ **Inaugural Programme of GSDP Course on Plant Tissue Culture Techniques & its Applications 2020-21**

Url: <http://nbrienviis.nic.in/ViewMajorActivity.aspx?Id=11846&Year=2021>

National level Green Skill Development Programme (GSDP) Certificate Course on Plant Tissue Culture Techniques & its Applications at ENVIS-Centre, CSIR-National Botanical Research Institute, Lucknow.

Under the aegis of **Green Skill Development Programme (GSDP)** of **Ministry of Environment, Forest and Climate change (MoEF&CC)**, Govt. of India CSIR-National Botanical Research Institute (NBRI) is going to organize a certificate course on "**Plant Tissue Culture Techniques & its Applications**" commencing from 9th February, 2021 to 19th March, 2021. GSDP is an initiative by MoEF&CC to empower Indian youth to gain employment or self employment. MoEF&CC and National Skill Development Council have selected CSIR-NBRI to conducting this course. Inaugural function of the course took place at CSIR-NBRI. On this occasion of this function, **Dr. Debasis Chakrabarty**, Principal Scientist, NBRI welcomed Chief Guest and all the participants. **Dr. P. C Verma**, Principal Scientist, CSIR-NBRI, provided an overview of the course.

Prof. S. K. Barik, Director, CSIR-NBRI highlighted the importance of this course and briefed about the success stories of previously conducted courses.

Prof. Barik also narrated about the role of Tissue culture which is seen as an important technology for developing countries for the production of disease-free, high quality planting material and the rapid production of many uniform plants. He also emphasize on developing employment oriented skill programmes in the core competency areas (like plant tissue culture) of CSIR-NBRI.

Prof. Barik also stated that **25 participants** were selected from different parts of the country viz., **Maharashtra, Rajasthan, Haryana** and **Uttar Pradesh** by a National Level Screening and Advisory Committee.

Chief Guest of the Inaugural function was Emeritus Scientist of CIMAP, Lucknow, **Dr. A. K. Mathur** who highlighted the necessity and importance of this course in the present scenario and emphasized on the popularization of such course to cover large number of unemployed educated youths. He also encouraged participants to participate with full zeal and enthusiasm in **320 hour certificate** course and also congratulated CSIR-NBRI for organizing such courses of youth empowerment.

Prof. S.K. Barik, Director, CSIR-NBRI congratulate **Dr. Pankaj Kumar Srivastava**, Principal Scientist & Coordinator ENVIS, CSIR-NBRI and whole team of ENVIS-RP-NBRI (**Dr. Anju Patel** Scientist & Co-coordinator ENVIS, **Mr. Sunil Tripathi** Programme Officer, **Mr. Diwakar Saini** Information Officer, **Ms. Karishma Srivastava** IT-Officer and **Mr. Akash Tiwari** Data Entry Operator) to conduct these programmes in COVID-19 scenario.

➤ **Picture Gallery:**



GSDP Participants Registration Desk



GSDP Participants along with Faculty member



Dr. Debasis Chakrabarty, Principal Scientist, NBRI welcoming Chief Guest and all the participants



Dr. P. C Verma, Principal Scientist, CSIR-NBRI, providing an overview of the course



Dr. A. K. Mathur, Emeritus Scientist of CSIR-CIMAP, Lucknow addressed to GSDP participants and audience



Dr. A. K. Mathur, Emeritus Scientist of CSIR-CIMAP, Lucknow who highlighting the necessity and importance of this course in the present scenario



Prof. S.K. Barik, Director, CSIR-NBRI addressing to the audience



Release of the course manual during inauguration of GSDP course on Plant Tissue Culture Techniques and its Applications



Director CSIR-NBRI Prof. S.K.Barik presented Memento to the Chief Guest of Dr. A. K. Mathur, Emeritus Scientist of CSIR-CIMAP, Lucknow

➤ Media Gallery:



Amar Ujala, 10th February 2021



Hindustan, 10th February 2021



The Pioneer, 10th February 2021



Urdu Daily, 10th February 2021



Rashtriya Sahara, 10th February 2021

- **Valedictory Programme of GSDP Course on “Plant Tissue Culture Techniques and its Applications”**
Url: <http://nbrienvis.nic.in/ViewMajorActivity.aspx?Id=11865&Year=2021>

Under A 45 day long certificate course on “**Plant Tissue Culture Techniques and its Applications**” under Green Skill Development Programme (GSDP) of Ministry of Environment, Forest & Climate Change (MoEF&CC), Govt. of India has been concluded by ENVIS Centre of CSIR-NBRI, Lucknow.

The programme was commenced on February 09th, 2021 at NBRI. The Valedictory Function of the programme was organized by the ENVIS-RP-Centre of NBRI on March 19th, 2021 in the auditorium of NBRI.

A total of **25 participants** were selected from different parts of the country viz., **Maharashtra, Uttarakhand, Rajsthan and Uttar Pradesh** by a National Level Screening Committee.

After screening, **14 participants** have been registered for the course. Out of these registered participants, **12** have successfully completed the course and awarded with their certificates. The course has been conducted for **320 hrs** (comprising of 120 hrs of theory and 200 hrs of practical classes and field visits/hands-on).

Dr. Debasis Chakrabarty, Principal Scientist, NBRI welcomed the Chief Guest and all the participants.

Prof. S. K Barik, Director, NBRI has given the detailed account of Green Skill Development Programme under the initiative of Skill India Mission of Hon’ble Prime Minister of India.

Dr. Praveen C. Verma, Principal Scientist has briefed the report of the course implemented for one and half month at the institute.

Dr. Prabodh Kumar Trivedi, Director, CSIR-CIMAP, Lucknow addressed the audience as the Chief Guest, and emphasized the importance of developing skills among the educated unemployed youths of the country.

The Chief Guest appreciated the efforts of NBRI and congratulated for organizing this certificate course for youths. Dr. Trivedi underlined the significance of Plant Tissue Culture Techniques for industries.

➤ **Picture Gallery:**



Dr. Debasis Chakrabarty, Principal Scientist, NBRI welcomed the Chief Guest and all the participants.



Prof. S.K. Barik, Director CSIR-NBRI addressed to the audience



Dr. Praveen C. Verma, Principal Scientist presented a brief report of the course



Dr. Prabodh Kumar Trivedi, Director, CSIR-CIMAP addressed the audience as the Chief Guest



Feedback by the GSDP Participants



Certificate distribution to the successful participants



Certificate distribution to the faculty members



*Director CSIR-NBRI Prof. S.K.Barik presenting Memento to the Chief Guest
Dr. Prabodh Kumar Trivedi, Director, CSIR-CIMAP Lucknow*

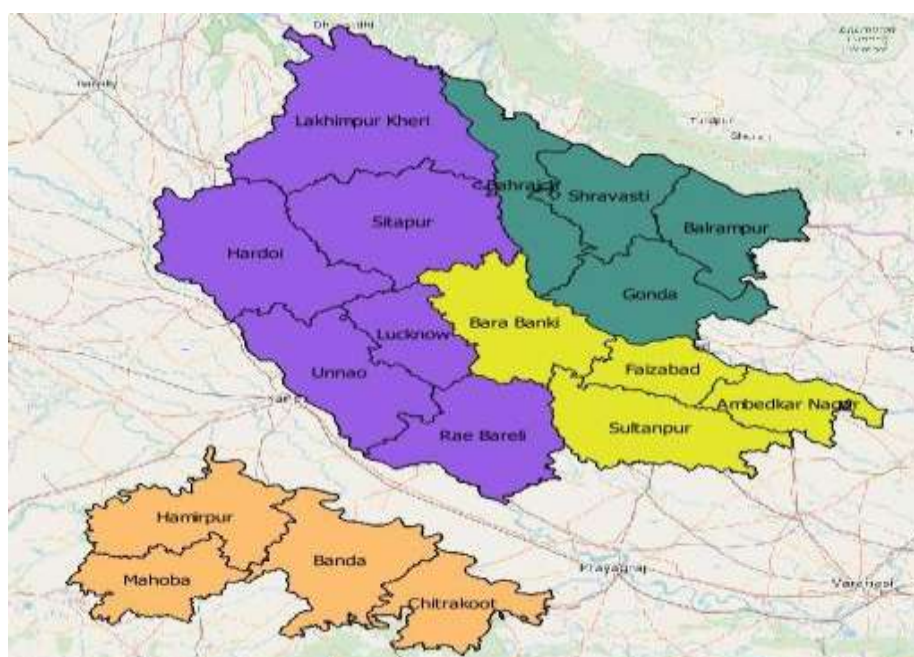


Group Photo of the participants

1. NATIONAL ENVIRONMENT SURVEY–a Grid based Decision Support System for Sustainable Management of Natural Resources(NES-GRIDSS):

4.1. Districts allotted to ENVIS-RP-NBRI

Sl. No.	Division	Districts
1	Chitrakoot	Banda Chitrakoot Hamirpur Mahoba
2	Devipatan	Bahraich Balrampur Gonda Shravasti
3	Lucknow	Hardoi Lakhimpur Kheri Lucknow Raebareli Sitapur Unnao
4	Faizabad	Ambedkar Nagar Amethi Barabanki Faizabad Sultanpur



4.2. Following 17 modules under NESprogramme were assigned for the collection of secondary data:

Module No.	Category
1	Administrative
2	Demographic
3	Economic
4	Climate & Disaster Occurrences
5	Natural Resources
6	Water Resource
7	Ecology
8	Infrastructure
9	Agriculture
10	Animal Husbandry & Fisheries
11	Industries& Mining
12	Energy – Stock & Production
13	Pollution
14	Waste
15	Health
16	Heritage, Tourism
17	Funds Allocated For Environmental Protection, Resource Management And Engagement

4.3. **Revised Modules:** The no. of modules were reduced from 17 to 8 (as per instructions received from MoEF&CC through email dated 01.11.2019) . The list of revised modules are as follows;

Sl. No.	Name
1.	Administrative
2.	Demographic
3.	Economic
4.	Climate & Disaster Occurrences
5.	Natural Resources
6.	Infrastructure
7.	Waste
8.	Funds Allocated For Environmental Protection, Resource Management And Engagement

4.4. ENVIS-RP-NBRI inputs on Indian State Basic Environmental Information Database (ISBEID) Portal

1. Secondary Data of District **Lucknow** were collected from different sources from internet and through personal visit to some state departments like Uttar Pradesh Pollution Control Board, Uttar Pradesh Jal Nigam and other relevant departments as per NES guidelines of MoEF&CC.
2. All the collected information of District “**Lucknow**” has been uploaded on ISBEID Portal.
3. Although rest of the other 18 district data were collected and compiled but not uploaded due to some technical error on portal and the provided link was completely not working since October 21, 2019.

4.5. Issues and suggestions;

1. There is no specific manpower for NES related activities.
2. Ministry has not provided any kind of budget for the same.
3. Uniformity is needed on portal to enter the data for the specific field.
4. MoEF&CC may send a prior communication to the district authorities regarding the collection of data by ENVIS team members.
5. Portal should be full proof and easy to handle.
6. The modules may be constant and finalised by MoEF&CC before entering the data.

4.6. ISBEID (NES Portal) Details;

Previous portal link: <http://122.183.99.225/isbn2> (Not working)

New portal link: <http://164.100.60.53/isbn2> (Not working)