



ANNUAL PROGRESS REPORT

FY-2020-2021

ENVIS RESOURCE PARTNER ON
ENVIRONMENTAL BIOTECHNOLOGY
UNIVERSITY OF KALYANI, NADIA, WEST BENGAL
Email: desku@envis.nic.in, Phone: +91-33-25828750, Ext: 372
Fax: +91-33-2582 8282, Website: <http://www.deskuenvis.nic.in>

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

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Annual Progress of ENVIS Resource Partner from April, 2020- March, 2021

<p>1. Name of Host Organization:</p>	<p>S.N. Bose Innovation Building Dept. of Environmental Science University of Kalyani, Kalyani, Nadia West Bengal-741235</p>
<p>2. Assigned Subject Area:</p>	<p>ENVIRONMENTAL BIOTECHNOLOGY</p>
<p>3. Date/Month/Year of establishment of ENVIS Centre:</p>	<p>June, 2002</p>
<p>4. Name and designation of ENVIS Coordinators:</p>	<p><u>From 4th June, 2018 to 2nd June 2020</u> Prof. Ashis Kumar Panigrahi Department of Zoology, University of Kalyani</p> <p><u>From 2nd June 2020-5th October, 2020</u> Dr. Kausik Mondal Associate professor Department of Zoology University of Kalyani</p> <p><u>From 5th October, 2020-till date</u> Prof. Asoke Prasun Chattopadhyay ENVIS Coordinator Department of Chemistry, University of Kalyani E-mail Id: desku-env@nic.in & asoke@klyuniv.ac.in Mobile number: 08240510068</p> <p>Dr. Subhankar Kumar Sarkar ENVIS Deputy Coordinator Department of Zoology, University of Kalyani E-mail Id: rishi.subho@gmail.com</p>
<p>5. Has the Host Organization constituted an Advisory Committee for guiding the activities of the Centre?</p>	<p>Yes</p>
<p>Composition of the Advisory Committee: (Select YES or NO: if YES kindly fill the right column space; if NO kindly leave it blank)</p> <p>YES For smooth running of ENVIS RP and conducting of the GSDP course two committee formed with academic experts, industry personals, Government representatives etc.,</p>	<p>Expert Advisory body for smooth running of ENVIS RP, University of Kalyani</p> <ol style="list-style-type: none"> 1. Prof. Samir Kumar Mukherjee (Dept. of Microbiology, University of Kalyani) 2. Dr. Tapas Kumar Bandyopadhyaya (Dept. of Molecular Biology & Biotechnology, University of Kalyani) 3. Prof. Soma Mukherjee (Dept. of Environmental Science, University of Kalyani) 4. Prof. Jayanta Kumar Biswas (Department of Environmental Management, University of Kalyani) <p>(Details in our website: http://deskuenvis.nic.in/aboutus.asp)</p>

	<p>For smooth conducting of the GSDP course</p> <ol style="list-style-type: none"> 1. Hon’ble Vice Chancellor, Head of the Centre 2. Coordinator of the ENVIS Centre- Prof. Ashis Kumar Panigrahi. 3. Prof. S. C. Santra, Ex. Coordinator ENVIS centre, Former Professor, Dept of Environmental Science, University of Kalyani. 4. Prof. Samir Kumar Mukherjee, Dept. of Microbiology, University of Kalyani, Nadia 5. Dr. Tapas Kumar Bandyopadhyaya, Dept. of Molecular Biology & Biotechnology, K.U 6. Prof. Soma Mukherjee, Dept. of Environmental Science, University of Kalyani, Nadia 7. Prof. Jayanta Kumar Biswas, Department of Environmental Management, University of Kalyani 8. Mr. Naba Kumar Mandal, Kalyani Municipality 9. Mr. Raghiv Hushen, KRISH Biotech 10. Representative from Prandhara Water treatment plant 11. Dr. Joydev Jana, PHED, Kalyani
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6. Current ENVIS Staff Structure:

S l. N o .	Name	Position held	Qualification and Experience	Joining Date in ENVIS Centre	Joining Date in current position	2020-21		
						Leaving Date (if applicable)	Emoluments drawn (Rs.)	
							Monthly	Annual
1	Prof. Asoke Prasun Chattopadhyay	ENVIS Coordinator and Professor in the Dept. of Chemistry, K.U	Ph. D. in Chemistry	05.10.2020	05.10.2020	N.A	Nil	Nil
2	Subhanakar Kumar Sarkar	ENVIS Deputy Coordinator and Associate professor in the Dept. of Zoology, K.U	Ph. D. in Zoology <ul style="list-style-type: none"> • Teaching experience as Associate/Assistant Professor: 16 years. • Research experience: 19 years. • Enlisted as scarab beetle taxonomist from India in the 	05.10.2020	05.10.2020	N.A	Nil	Nil

			University of Nebraska - Lincoln State Museum, Division of Entomology, USA (In scarab workers world directory prepared by Prof. Brett C. Ratcliffe).					
3	Dr. Anusaya Mallick	Programme Officer	M.Sc, Ph. D. and Diploma in computer science. 10-years working as Programme Officer in ENVIS Resource Partner on ‘Environmental Biotechnology’ University of Kalyani. Previously more than ten years research experience (DST WOS-B Scientist , funded by DST, Govt. of India and Research Fellow , Funded DBT, Govt. of India in CIFA, ICAR, Bhubaneswar) and two years teaching experience as contractual lectures in Degree colleges .	26-12-2011	26-12-2011	NA	46,690.15	5,60,281.80
4	Mr. Sourav Banerjee	Information officer	B.Com, Diploma in Software Application, Web Designing More than 16 years working in ENVIS RP in University of Kalyani Previously, 05 years working experience as DEO in ENVIS Centre of CME, ISM, Dhanbad	01.09.2005	01.09.2005	NA	38,996.97	4, 67,963.64
5	Mr. Tanmay Acharjee	IT Officer	B. Tech in IT and MBA in IT Nearly three years working in ENVIS RP in University of Kalyani. Previously 8years teaching experience in High School and 7	03.07.2018	03.07.2018	NA	31,539.38	3,78,472.56

			months experience as OSD in Vice- Chancellor of Kalyani University, W.B					
6	Mr. Subham Dutta	Data Entry Operator	Higher Secondary. Nearly three years working in ENVIS RP in University of Kalyani. One year experience as computer expert and lab assistance.	03.07.2018	03.07.2018	NA	14,641.00	1,75,692.00
7.	Mandate of the Host Organization			Mandate of the ENVIS Centre				
	<p>The host organization, University of Kalyani is a state aided university with ‘A’ grade Accredited by the National Assessment and Accreditation Council (NAAC). The host institute provides infrastructure and academic support to the ENVIS RP.</p>			<p>Short term Objectives</p> <ul style="list-style-type: none"> • Systematic collection, compilation and dissemination of data on “Environmental Biotechnology” for providing information services. • Publication of Newsletters and Abstract volumes on the subject for wide dissemination of information. • Development and updation of a website in the field for accessing information through internet. • Organize training, workshop & seminar on thematic subjects. <p>Long term Objectives</p> <ul style="list-style-type: none"> • Upgradation of our existing website in the field of Environmental Biotechnology for the greater interest of researchers, academician, students, commercial entrepreneurs of specific areas and policy makers. • Development and documentation of environmental biotechnology data bank. • Establishment of liaison with various concerned institutes and departments of India and abroad, which are working in the field of Environmental Biotechnology. • Development of descriptive/numerical databases and maintaining environmental information database for district/state/country. • District-wise Environmental grid mapping. • Green skill development Programme (GSDP) courses and its application towards job creation and betterment of the Environment. 				


8. Activities Undertaken by ENVIS (RP) for the FY-2020-2021

8.1 Newsletters for FY- 2020-2021

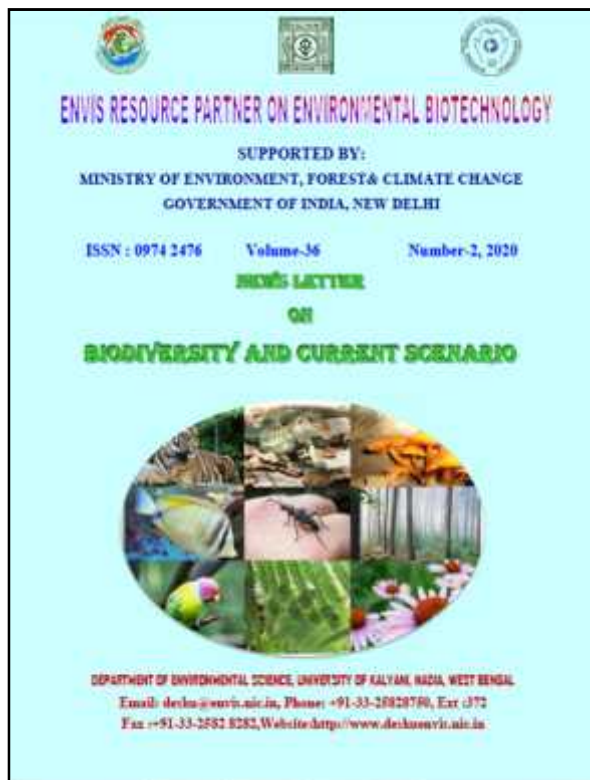
Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
1	ENVIS Newsletter on “Biotechnological & Environmental Aspects of COVID-19 ” (Vol. No. 36, Issue No. 1)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	1. Covid-19 in nutshell 2. COVID-19, Environment and India 3. Vaccine development and drug re-purposing against SARS-CoV-2 virus: an insight.	It describes how the Corona virus impacting all parts of human society as well as wild life which are the important part of the Biodiversity. Link: http://deskuenvis.nic.in/pdf/newslet36-1.pdf
2	ENVIS Newsletter on ‘Biodiversity and current scenario’ (Vol. No. 36, Issue No. 2)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	1. Biodiversity: In the light of Corona Pandemic 2. Care to Biodiversity for Sustainable future 3. Tools of Biotechnology for the Conservation of Biodiversity	It describes how the Biological diversity is the key indicator of the healthy ecosystem. Certain species are affected by environmental pollutions and anthropogenic activities. Some species are endangered and extinct day by day. But the extinction of a species may have impacts on entire ecosystems Link: http://deskuenvis.nic.in/pdf/newslet36-2.pdf
3	ENVIS Newsletter on ‘Application of CRISPR CAS9 on the Environment’ (Vol. No. 37, Issue No. 1)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	1. Application of Crispr/Cas-9 to Environmental Biotechnology 2. Crispr/Cas-9 mediated gene editing in plants for crop improvement and disease resistance	It describes the application of CRISPR CAS9 on the Environment. Link: http://deskuenvis.nic.in/pdf/newslet37-1.pdf

4	ENVIS Newsletter on ‘Green Technology ‘ (Vol. No. 37, Issue No. 2)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	<p>1. Green Technologies towards Sustainable Future</p> <p>2. Green Technology-A promising way of sustainable life</p>	<p>It describes how green technology is helps to environment friendly, how it developed and used in such way so that it doesn’t disturb our environment and how it conserve the natural environment and resources.</p> <p>Link: http://deskuenvis.nic.in/pdf/newslet37-2.pdf</p>
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8.1.1 ENVIS Newsletter on “Biotechnological & Environmental Aspects of COVID-19 (Vol. No. 36, Issue No. 1)

	<p>It describes how the Corona virus impacting all parts of human society as well as wild life which are important part of the Biodiversity.</p> <p>Link:http://deskuenvis.nic.in/pdf/newslet36-1.pdf</p>
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8.1.2. ENVIS Newsletter on ‘Biodiversity and current scenario’ (Vol. No. 36, Issue No. 2)

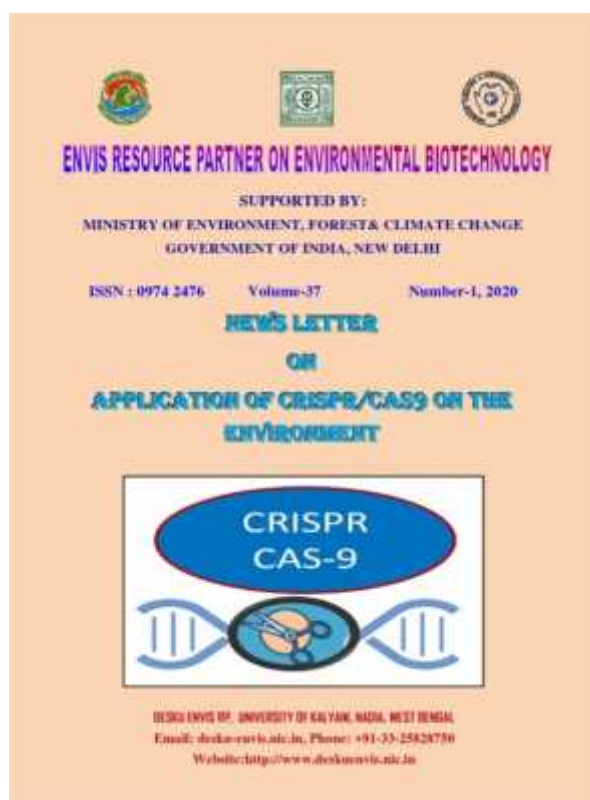


It describes how the Biological diversity is the key indicator of the healthy ecosystem. Certain species are affected by environmental pollutions and anthropogenic activities, so some species are endangered and extinct day by day. But the extinction of a species may have impacts on entire ecosystems

Link:

<http://deskuenvis.nic.in/pdf/newslet36-2.pdf>

8.1.3.ENVIS Newsletter on ‘Application of CRISPR CAS9 on the Environment’ (Vol. No. 37, Issue No. 1)



It describes the application of CRISPR CAS9 on the Environment.

Link:

<http://deskuenvis.nic.in/pdf/newslet37-1.pdf>

8.1.4. ENVIS Newsletter on ‘Green Technology’ (Vol. No. 37, Issue No. 2)



It describes how green technology is helps to environment friendly, how it developed and used in such way so that it doesn't disturb our environment and how it conserve the natural environment and resources.

Link:

<http://deskuenvis.nic.in/pdf/newslet37-2.pdf>

8.2 Abstract Volume for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
1	Abstracts volume (Dec 2020- Vol. No. 36)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	Abstract of research papers on Subject related 16 Thematic areas	http://deskuenvis.nic.in/pdf/abstract36.pdf
2	Abstracts volume (Dec 2020- Vol. No. 37)	DESKU, ENVIS (RP), Kalyani, W.B, India	2020	Soft copy and hard copy	Abstract of research papers on Subject related 16 Thematic areas	http://deskuenvis.nic.in/pdf/abstract37.pdf


8.2.1 Abstracts volume (Dec 2020- Vol. No. 36)



Abstract of research papers on Subject related 16 Thematic areas (1.Biofertilizer, 2.Biopesticide, 3.Bioenergy, 4.Bio-composting, 5.Bioaccumulation, 6.Agricultural Biotechnology, 7.Bio-sensor, 8.Biodegradation, 9.Bio-remediation, 10.Bio-marker, 11.Biotransformation, 12.Pollen Biotechnology, 13.Bioengineering, 14.Policy Issues, 15.Nano biotechnology, 16.Biomimicry) from Research journals, Online and books

Link- <http://deskuenvis.nic.in/pdf/abstract36.pdf>

8.2.2. Abstracts volume (Dec 2020- Vol. No. 37)

	<p>Abstract of research papers on Subject related 16 Thematic areas (1.Biofertilizer, 2.Biopesticide, 3.Bioenergy, 4.Bio-composting, 5.Bioaccumulation, 6.Agricultural Biotechnology, 7.Bio-sensor, 8.Biodegradation, 9.Bio-remediation, 10.Bio-marker, 11.Biotransformation, 12.Pollen Biotechnology, 13.Bioengineering, 14.Policy Issues, 15.Nano biotechnology, 16.Biomimicry) from Research journals, Online and books.</p>
	<p>Link- http://deskuenvis.nic.in/pdf/abstract37.pdf</p>

8.3 Mobile Apps for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/cov erage of topics	Relevance and URL
1	Awareness of Corona virus	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B,India	2020	Mobile application available in google play store	Awareness of Corona virus	available in google play store
2	Social distancing due to Corona Pandemic	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B, India	2020	Mobile application available in google play store	Social distancing due to Corona Pandemic	available in google play store
3	People Biodiversity Registers	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B, India	2021	Mobile application available in google play store	People Biodiversity Registers	available in google play store https://play.google.com/store/apps/details?id=com.envisrpkalyani
4	E-Abstract	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B, India	2021	Mobile application available in google play store	E-Abstract	available in google play store https://play.google.com/store/apps/details?id=com.rpkalyanieabstract

8.3.1. Mobile Apps on Awareness of Corona virus

DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B, India developed the mobile app. It is available in google play store. It contains the Awareness of Corona virus

8.3.2. Mobile Apps on Social distancing due to Corona Pandemic

DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B, India developed the mobile app. It is available in google play store. It gives the information about Social distancing due to Corona Pandemic.

8.3.3 Mobile Apps on People Biodiversity Registers



DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B,India developed the mobile app. It is available in google play store. It contains about the People Biodiversity Registers.

<https://play.google.com/store/apps/details?id=com.envisrpkyani>

8.3.4 Mobile Apps on E-Abstract



DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B,India developed the mobile app. It is available in google play store. It contains about the information about the e-abstract

<https://play.google.com/store/apps/details?id=com.rpkalyanieabstract>

8.4 Review Article/abstract for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
1	ISSN : 0974 2476 Volume-36 Number-1(Biotechnological and environmental aspects of Covid-19)	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B,India	2020	Hard copies distribution and online dissemination	Covid-19 in nutshell	http://deskuenvis.nic.in/pdf/newslet36-1.pdf
2	ISSN : 0974 2476 Volume-36 Number-2 (Biodiversity and current scenario)	DESKU, ENVIS RP on Environmental Biotechnology, K.U Kalyani, W.B,India	2020	Hard copies distribution and online dissemination	.Care to Biodiversity for Sustainable Future	http://deskuenvis.nic.in/pdf/newslet36-2.pdf

8.5 leaflet/handout for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
1	Handout on World Ozone Day-2021	ENVIS RP on Environmental Biotechnology , K.U	2020	Soft copy	Details about the theme of the world ozone day-2021	http://deskuenvis.nic.in/pdf/handout%20ozone%20day-2020-1.pdf



2	Leaflet on Corona virus precaution in Bengali language	ENVIS RP on Environmental Biotechnology, K.U	2020	Soft copy	precaution about Corona virus in English and Bengali language	http://desk.uenvis.nic.in/img/Leaflet%20on%20corona%20awareness%20in%20bengali.jpg
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8.6 Boucher for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
8.6.1	People’s biodiversity Register	ENVIS RP on Environmental Biotechnology, K.U	2020	Online and hard copy	GSDP Certificate course on People’s biodiversity Register	http://deskuenvis.nic.in/pdf/prb.pdf

PROFORMA FOR APPLICATION
(Please fill in capital letters)

Full Name: XPS (attach size photograph)

2. Qualification:

3. Communication Address:
(Give e-mail address and mobile no.)

5. Permanent address:

5. Date of birth:

7. Sex (male/female):

8. Details of any GSDP Course done previously:

(Please attach proof of age, education & caste certificate with recent passport photograph)

Declaration
Certified that the information furnished is true to the best of my knowledge and belief.

Date:

Place:

Signature of the applicant

Chief patron
Professor (Dr.) Manas Kumar Sanyal
Vice-Chancellor, KU

Patron
Professor (Dr.) Goutam Paul
Pro Vice Chancellor, KU

ENVIS-RP Coordinators
Prof. Asoke Prasad Chattopadhyay
Coordinator, ENVIS RP, KU
Email: asoke@klyuniv.ac.in
Mobile: 8248519888

Dr. Subhankar Kumar Sarkar
Dy. Coordinator, ENVIS RP, KU
Email: skarkar0018@klyuniv.ac.in
Mobile: 9674483370

Course Coordinators
Dr. Maharaj Biswas & Dr. Ananta Samadder
Department of Zoology, KU

Course Organizer (ENVIS RP)
Dr. (Mrs) Anusaya Mallick, Programme Officer
Mr. Sumit Banerjee, Information Officer
Mr. Tanmay Acharyo, Information Tech. Officer
Mr. Shashan Dutta, Data Entry Operator



How to reach
S.N Bose Building, Innovation Centre
University of Kalyani



Information Brochure of
Green Skill Development Programme (GSDP)
On
People's Biodiversity Registers (PBRs)



Organised By: DESKU ENVIS Resource Partner
on Environmental Biotechnology and University of
Kalyani, Kalyani, Nadia
Under the aegis of
University of Kalyani
("A" Grade Accredited by NAAC)
Kalyani, Nadia
West Bengal, India

Sponsored by: Ministry of Environment, Forest and
Climate Change (MoEF&CC), Government of India
and University of Kalyani, Kalyani, Nadia, West
Bengal, India

About the Green Skill Development Programme (GSDP)
ENVIS Resource Partner on Environmental Biotechnology in the University of Kalyani, Nadia, funded by the Ministry of Environment, Forest & Climate Change (MoEF&CC), Govt. of India is going to conduct a Certificate Course on Peoples' Biodiversity Register (PBR) under Green Skill Development Programme (GSDP).

There exists a demand-supply gap of skill sets, both cognitive and practical, at various levels in the Environment / Forest fields in India. Realizing the demand for green skilled youth, the Green Skill Development Programme (GSDP) has been developed in EI Division in consultation with the National Skill Development Agency (NSDA). The programme was conceptualized, and training modules prepared as per NSQF guidelines. Hon'ble Minister of MoEF&CC has launched the programme and released the Basic Course and Advanced Course training modules on June 4, 2017, on the eve of World Environment Day.

Peoples' Biodiversity Registers (PBRs)
People's Biodiversity Register (PBR) documents folk knowledge of status, use, history, ongoing change and forces driving alterations in biodiversity resources, identifying gainers and losers in these processes and people's perceptions of how these resources should be managed. PBR addresses the major objectives of Biodiversity Act conservation, sustainable use, benefits and safeguarding Traditional Knowledge. These attempts have been

motivated by a desire to promote decentralised system of management of natural resources and to create the basis for equitable sharing of benefits of commercial utilisation of folk knowledge and uses of biodiversity. The documents bring together important local specific information on biodiversity resources and ecological processes affecting them. The preparation of People's Biodiversity Registers (PBRs) involves the active support and cooperation of a large number of people who need to share their common as well as specialized knowledge. One of the first steps for preparing a PBR is to organize a group meeting to explain the objectives and purpose of the exercise. Different social groups in the village need to be identified for purpose of data collection from those groups. In an urban situation, spots where biodiversity are important need to be identified for the purpose of their study and documentation. The documentation process includes information gathered from individuals through detailed questionnaire, focused group discussion with persons having knowledge about an issue and published secondary information.

Training Methodology:
Both theory and practical sessions (with field visit and hands-on training) will be facilitated by core academic staff. Well qualified experts will deliver lectures and facilitate practical experience.

Objective of PBR
✓ To conserve and sustainably use biological diversity.

- ✓ To respect and protect traditional knowledge of local communities related to biodiversity.
- ✓ Conservation and development of areas of importance from the standpoint of biological diversity by declaring them as heritage sites of biodiversity.
- ✓ Protection and rehabilitation of endangered and threatened species.

Employment opportunities

- ✓ State Biodiversity Boards
- ✓ Zoological Parks
- ✓ Museums
- ✓ Research institutes/organisations
- ✓ Different National/state level survey programmes

Minimum Qualification: Science graduate (with biological science)

No of students: 20

Duration: 180 hrs

How to Apply: Interested persons may send their applications in the enclosed form with relevant documents through email (desku-env@nic.in) to the ENVIS coordinator. Please follow the ENVIS-RP and Kalyani University website for details (<http://klyuniv.ac.in> and <http://deskuenvis.nic.in>).

Selection of candidates: A maximum of 20 participants will be selected for the course by a screening committee. In case of any query, please contact Course Coordinators.

Note: Course will start from first week of March, 2021. Please see KU website for further information.

Factsheet of 2020-21 (As on 31st March, 2021) on Activities of ENVIS Resource Partner on “Environmental Biotechnology”

8.6.2	Brochure of Webinar on Care to Biodiversity	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Brochure of Webinar on Care to Biodiversity	http://deskuenvis.nic.in/img/Brochure%20Care%20to%20BD.jpg
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8.6.3	Brochure of Say No to Plastic Pollution	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Brochure of Say No to Plastic Pollution	http://deskuenvis.nic.in/Webinar.jpg
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8.6.4	Brochure on World Ozone Day	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Brochure of Say No to Plastic Pollution	http://deskuenvis.nic.in/pdf/Brochure%20World%20Ozone%20Day-2020%20by%20DESKU%20ENVIS%20RP-1.pdf
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8.6.5	Brochure Promotion of Science' in the area of Genetic Scissors (CRISPR-Cas9)	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Brochure on Promotion of Science' in the area of Genetic Scissors (CRISPR-Cas9)	NA
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8.7 Poster for FY- 2020-2021

8.7.1	Poster on COVID - 19	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Poster on COVID - 19 describes the covid and life style changes	http://deskuenvis.nic.in/img/POSTER-COVID%20-19-new.jpg
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8.7.2	Poster on Effect of Covid-19 on Biodiversity	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Poster describes how covid 19 affecting the biodiversity	http://deskuenvis.nic.in/img/POSTER-Biodiversity.jpg
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8.7.3	Poster on International day for Biodiversity	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	Poster describes the Biodiversity and its conservation	NA
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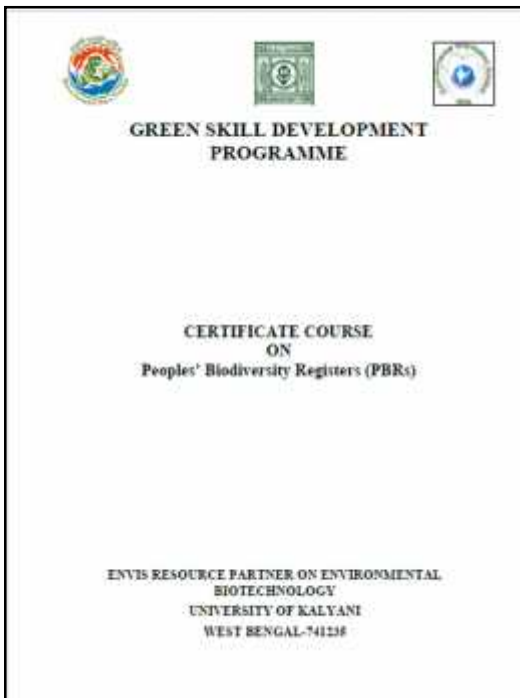


8.7.4	Poster on world wetland day-2021	ENVIS RP on Environmental Biotechnology, K.U	2021	Online	Poster describes the types of wetland, ramsarsites in India and function of wetland	http://deskuenvis.nic.in/img/STATUS%20OF%20WET%20LANDS%20IN%20INDIAN-1%20[Compatibility%20Mode].jpg
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8.8 Module for FY- 2020-2021

Sl. No	Title	Publisher	Year	Type of publication	Content/coverage of topics	Relevance and URL
8.8.1	People biodiversity Register	ENVIS RP on Environmental Biotechnology, K.U	2020	Online	GSDP Certificate course on People’s biodiversity Register	NA



8.9 Quarterly DESKU ENVIS (RP) reports for FY-2020-2021.

Sl. NO	Reports	Glimpse of the report
1	April-June, 2020	

<p>2</p>	<p>July-September, 2020</p>	<p>Project Outcome Monitoring Dashboard of RP/1, Jaring Quarterly Report (July-September, 2020) of DESKE ENVIS, RP, University of Kalyani, Nadia, West Bengal</p> <table border="1"> <thead> <tr> <th>Q1</th> <th>Q2</th> <th>Q3</th> <th>Q4</th> </tr> </thead> <tbody> <tr> <td></td> <td>July-Sept 2020</td> <td></td> <td></td> </tr> <tr> <th>No.</th> <th>Indicator Name</th> <th>Description</th> <th>Target</th> <th>Achieved FY20</th> </tr> <tr> <td>1</td> <td>Number of publications/knowledge products developed</td> <td>Scientific Publications, Patents, Booklets, Booklets etc.</td> <td></td> <td></td> </tr> <tr> <td>2</td> <td>Number of Research paper developed</td> <td>Theme based digital maps related to environmental issues</td> <td></td> <td></td> </tr> <tr> <td>3</td> <td>Number of Mobile apps developed</td> <td>Development of new mobile app for a particular specific problem of existing mobile app created for enhancement of the facilities</td> <td></td> <td></td> </tr> <tr> <td>4</td> <td>Number of youth related activities/programs</td> <td>Student youth camps/CSR</td> <td></td> <td></td> </tr> <tr> <td>5</td> <td>Percentage in number of knowledge of mobile apps from the activities of Individual ENVIS Centers, user generated data, list of stakeholders, feedback, suggestions, policy, strategy, project etc.</td> <td>Mobile app developed from the ENVIS Data RP Center</td> <td></td> <td>Mobile app developed</td> </tr> <tr> <td>6</td> <td>Percentage in number of analytical reports generated from the ENVIS dashboard by ENVIS Data user generated</td> <td>Analytical reports generated based on ENVIS dashboard</td> <td>90%</td> <td>90%</td> </tr> <tr> <td>7</td> <td>Number of digital youth engagement activities comprising the activities/programmes</td> <td>Student youth camps/CSR</td> <td></td> <td></td> </tr> <tr> <td>8</td> <td>Percentage in number of knowledge of environmental education products, list and type</td> <td>Use of Dashboard from ENVIS website</td> <td></td> <td>Mobile app developed</td> </tr> </tbody> </table> <p>Date: 01.10.2020 Signature of ENVIS Coordinator</p>	Q1	Q2	Q3	Q4		July-Sept 2020			No.	Indicator Name	Description	Target	Achieved FY20	1	Number of publications/knowledge products developed	Scientific Publications, Patents, Booklets, Booklets etc.			2	Number of Research paper developed	Theme based digital maps related to environmental issues			3	Number of Mobile apps developed	Development of new mobile app for a particular specific problem of existing mobile app created for enhancement of the facilities			4	Number of youth related activities/programs	Student youth camps/CSR			5	Percentage in number of knowledge of mobile apps from the activities of Individual ENVIS Centers, user generated data, list of stakeholders, feedback, suggestions, policy, strategy, project etc.	Mobile app developed from the ENVIS Data RP Center		Mobile app developed	6	Percentage in number of analytical reports generated from the ENVIS dashboard by ENVIS Data user generated	Analytical reports generated based on ENVIS dashboard	90%	90%	7	Number of digital youth engagement activities comprising the activities/programmes	Student youth camps/CSR			8	Percentage in number of knowledge of environmental education products, list and type	Use of Dashboard from ENVIS website		Mobile app developed
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8.10 Awareness Programmes Organised (Titles of Programmes, content and coverage of topics, Relevance of the theme, number of participants, Methods adopted for the dissemination of the knowledge and information)

Sl. No	Title of the Programmes	Content/Coverage of topics	Relevance of the theme	Methods for dissemination of knowledge
8.10.1	World Environmental Day, 2020 in University of Kalyani, Nadia, West Bengal	World Environmental Day theme on 5 th June, 2020	World Environmental Day theme	Awareness through plantation programme in the University premises followed by Webinar.
8.10.2	World Ozone Day, 2020 in University of Kalyani, Nadia, West Bengal	Celebrated the World Ozone Day on 16th September, 2020, an online Drawing & Poster Competition was organized among School children in different categories and College & University students on related issues of Covid-19 Pandemic.	World Environmental Day theme	Awareness programme through online Drawing & Poster Competition was organized among School children in different categories and College & University students on related issues of Covid-19 Pandemic.





Drawing Competition on World Ozone day-2020 -Category II - Class V – VIII



Drawing Competition on World Ozone day-2020 -Category I - Class I – IV



Poster competition on World Ozone Day-2020

EFFECT OF COVID-19 ON THE ENVIRONMENT AND OZONE-DEPLETING SUBSTANCES

INTRODUCTION

The International Day for the Preservation of the Ozone Layer was created by the United Nations to commemorate the signing of the Montreal Protocol in 16th Sept. 1987 by 196 states and the European Union, within which the main ozone-depleting chemicals were banned. According to Walter J Tingle, the atmosphere is considered the "whole mass of air that surrounds the earth" (Fig.1). Ozone layer is the one of the most important protective layer of atmosphere which absorbs 95% to 99% of the most harmful UV-radiation of Sun. Due to the anthropogenic and industrial activities environment and air quality are adversely impacted. This protective ozone layer used to deplete (Fig.2) by some natural and industrial chemicals like stratospheric ozone (SO₂), nitrous oxide (N₂O), Hydrogen Chloride (HCl) and man-made compounds specially Chlorofluorocarbon (CFC), Bromochlorocarbon etc. The unprecedented Coronavirus COVID-19 pandemic is the global health problem in our time and biggest challenge for the next kind after world war II. Social distancing and lockdown are the main ways to control the spreading of the virus.

Effects of COVID-19 on Indian atmosphere

Self quarantine and social distancing are the main reason for "masking some" for nature and it reduces human interaction with natural environment. Major impact of lockdown due to COVID-19 can be observed on air quality, nature life which is being experienced by everyone and recorded in various official reports.

- In NDIA, reduction of PM_{2.5} concentration from 109-238 µg/m³ to 58-60 µg/m³ within 18 days of lock down in OVARAKA river basin!
- Air quality index has significantly improved in northern and eastern area of IMBA. Control of local transportation and limited industrial activities has decreased the overall pollution level in air.

Other impact of COVID-19 Pandemic

- Improvement of quality in Indian rivers like Ganga, Yamuna etc.
- Central pollution control board of India specially focused on PM_{2.5}, PM₁₀, NO₂, SO₂, CO, NH₃, Dewe
- Lack of industrial effluents production in use of irrigation water increasing rate of rain fall are the blessings of this pandemic
- Aerosol Optical Depth (AOD) measurements over India during the period **Month 11 to April 8 (2019-2020)** showed a significant improvement (Fig.3)
- Average concentration of SO₂ has significantly dropped (40%-50%) in Indian atmosphere according to Gopichand Senthil-Selvi satellite image (Fig.4)
- A significant recovery of ozone layer happened above **Antarctica** after millions of people are staying inside during the coronavirus pandemic (Fig.5)

It is believed that the **largest ozone layer hole** - spreading 1 million square kilometers, above the **Arctic** is healing due to the worldwide covid19 lockdown causing a reduction in air pollution. (ECMWF)

Conclusion

- Locking down and social distancing is only prevention of COVID-19 Pandemic
- Environment and other many factors have started healing due to the restriction of human activities

Prepared by: **Dr. Jyoti Chavhan**
 (PhD Scholar) ICSS,
 Department of Environmental Science,
 University of Mumbai, India
 Contact: 9821023430
 Email: jchavhan@rediffmail.com

Effect of Covid -19 on Environment and Ozone Depleting Substances

Prepared by: **Dr. Jyoti Chavhan**, (PhD Scholar) ICSS, Department of Environmental Science, University of Mumbai, India. Contact: 9821023430, Email: jchavhan@rediffmail.com

The COVID-19 has caused global reduction in economic activity and although this is a concern but the temporary drop of human activity appears to have a positive impact on environment.

Air quality:

- Decreased concentrations of PM_{2.5} and P M₁₀.
- Due to restrictions, NO₂ was reduced by 12.8 µg/m³ and 12.8 µg/m³, and the O₃ 2.8 fold by 3.8 µg/m³. Greenhouse gas emissions and pollution levels across the country have fallen significantly.
- Reduction of environmental noise level.
- Lesser use of private and public transport is observed drop in motor road congestion.
- Cleaner vehicles have fallen by 67% during this lockdown and this could lead to decline in the annual carbon emission of 7 %.

Decline in nitrogen dioxide level

Decline exploitation on natural resources = Crushed

- Local prices of petrol and diesel were down to ₹19.85 and ₹18.43 per litre, ₹33 drop in price of brass will have more cash in the hands of the common people by the end of year.

Water quality:

The water in the ponds cleared and experienced greater water flow and visibility of fish. The increase in water clarity was due to settling of sediment that is disturbed by boat traffic, and decreased the decrease in air pollution along water ways. For e.g. Ganga River water is for drinking in Varanasi.

Effect on wildlife:

- Wildlife is recuperating, apart from occasional sightings of different animals on the streets, increased sightings in Mumbai, Sea turtles laying eggs on beaches, the olive ridged booby, the frigatebirds are returning to lakes and water bodies.
- Decrease in the demand of fish and fish oil has increased the fish stocks, mainly due to sharp decline in fishing.

Effect on vegetation:

- Clean beaches: Beaches are one of the coastal assets that provides services that are vital to the survival of coastal communities and promote intrinsic values.
- Increased growth of plants: No human interference, cleaner air and water resulted in increased vegetation and more production of oxygen.

Drawbacks due to covid-19

- Masking: It will go up for high value products like diamonds and jewelry in all over countries.
- Increased waste: The unprecedented use of disposable face masks adds up to the overall waste burden of plastic waste.
- Increased medical waste: Medical wastes increase the increased number of the hospitalization, leading to disposal of plastic masks, cotton and medicines.
- Reduction in water recycling: Decrease in recycling of wastewater leads to increase the overall increase in water consumption.
- Strengthening the drop of groundwater: The Chlorine in drinking water will cause harmful effects on human health.

8. 11 Green Skill Development Program (GSDP)

SL.NO	Courses offered	Course starting date batch-wise	Batch-size	Sanctioned amount during FY 2020-21	Remarks/cu rrent status
1	People’s Biodiversity Register (GSDP Report attached in Annexure-I)	2 nd March-26 th March, 2021	19	Rs.- 6,50,000/-	Completed successfully

8.12 Webinars and competitions

Webinar/online competition

Due to the COVID-19 pandemic. the DESKU ENVIS Resource Partner on Environmental Biotechnology, University of Kalyani, organized online seminars (webinars) and online competitions through *Google meet, YouTube channel & Face book page.*

8.12.1. Webinar on Care to Biodiversity

As the theme of the World Environment Day this year was Biodiversity, the DESKU ENVIS RP on Environmental Biotechnology, organized a webinar on CARE to BIODIVERSITY on the occasion of World Environment Day, 5th June, 2020. The webinar was inaugurated by the Honourable Vice Chancellor, University of Kalyani, Prof. Sankar Kumar Ghosh, in presence of other distinguished personnel such as Prof. Ashis Kumar Panigrahi, Coordinator, ENVIS Centre, and Head, Dept. of Zoology, Dr. A.K. Sanyal, Chairman, West Bengal Biodiversity Board, Dr. Anant Pande, Scientist, Wildlife Institute of India, Dehradun, Uttarakhand, Dr. Neera Sen Sarkar, Dept. of Botany, K.U., Dr. Punarbasu Chaudhuri, Dept. of Environmental Science, University of Calcutta and Dr. Shubhransu Nayak, Odisha Biodiversity Board.

On the occasion of the World Environment Day, 5th June, 2020, Vice Chancellor Prof. Ghosh released the ENVIS newsletter on **Biotechnological and Environmental Aspects of COVID-19 (Vol-36, No. 1) (ISSN:09742476)**. A total of **1870** registered participants were selected for participating in the webinar. The webinar was viewed by **3,737** participants live in *YouTube* and over **125** participants viewed it in *Facebook* simultaneously. The participants comprised of students, academicians, scientists, doctors, administrative persons from all over the world. While majority was from Asian countries, some were from USA, Europe and Australia, who actively participated in the seminar. E-certificates have been distributed among the participants. **(Detail**

Report as Annexure II)

8.12.2. Webinar on Say no to plastic pollution

The Webinar on Say No to Plastic Pollution was organized on 18th July, 2020 through *Google meet* and *You Tube*. The webinar was inaugurated by Honourable Vice Chancellor, University of Kalyani, Prof. Sankar Kumar Ghosh. The other dignitaries were Prof. Ashis Kumar Panigrahi, Pro-Vice chancellor of the University of Burdwan and Ex-Coordinator ENVIS Resource Partner, Padma Shri Prof. Rajagopalan Vasudevan, Dean and Professor, Department of Chemistry, TCE and Coordinator; TCE ENVIS, Madurai, Tamil Nadu and Dr. Sukalyan Chakraborty, Birla Institute of Technology, Mesra, Ranchi. There were **579 participants** in the event. E-certificates were distributed among the participants (**Detail Report as Annexure III**)

8.12.3. Webinar on ‘Promotion of Science’ in the area of Genetic Scissors (CRISPR-Cas9)

A webinar on Promotion of Science in the area of Genetic Scissors (CRISPR-Cas9) was organized on 15th October, 2020 by ENVIS RP on Environmental Biotechnology with the collaboration of DST-PURSE programme, University of Kalyani with the association of NASI and INSA. The welcome address was given by Prof. Asoke P. Chattopadhyay, ENVIS Coordinator. The webinar was inaugurated by the Honourable Vice Chancellor, University of Kalyani, Prof. Sankar Kumar Ghosh, in presence of several resource persons and dignitaries. There were **382** participants who participated through *Google meet* and *Youtube*. The concluding remarks and the vote of thanks was given by the ENVIS coordinator.

8.12.4 Online competition on World Ozone Day

On account of the restrictions imposed due to COVID-19 pandemic, the ENVIS RP was only able to organize an online Poster and Drawing Competition to celebrate the World Ozone Day on 16th September, 2020. The drawing competition was held among school children of different categories. The poster competition was held among the college and university students. The drawings and posters were compiled and displayed in our *YouTube* channel and the link was shared to the participants. The E-certificates were provided to all the participants.

1. **Theme of Poster competition:** Effect of **COVID-19** on the Environment and Ozone depleting substances
2. **Theme of Drawing Competitions:** **COVID-19** and Environment/ Air and water pollution/ Climate change

9. ENVIS Staffs Attained the ENVIS Meetings

1. Video Conference (VC) on Thursday, 28th January, 2021

Prof. Ashoke Prasun Chattopadhyay Coordinator ENVIS RP, Dr. Subhankar Kumar Sarkar, Deputy coordinator ENVIS RP, Dr. Anusaya Mallick, Programme Officer, Mr. Sourov Banerjee, Information Officer and Mr. Subham Datta, Data Entry Operator attained the Video conference

meeting on 28th January, 2021. The VC was chaired by Shri Devender Singh, Senior Economic Advisor, MoEF&CC, Government of India.

2. One week online GIS training on basis of GIS

The ENVIS staffs (Dr. (Mrs) Anusaya Mallick, Program Officer and Mr. Sourov Banerjee, Information Officer and Mr. Tanmay Acarjee) attained the one week online GIS training on basis of GIS, organized by WWF ENVIS RP from 27th July-1st August, 2020

Dr. Anusaya Mallick, P.O attained the Webinar organized by ENVIS RP and Hubs

1. Wetlands in India- Presentation, Threats and Conservation on 2nd February, 2021 Organised by ENVIS RP, University of Madras, Chennai
2. Role of Women in Environmental Sustainability- on 28th July, 2020, Organised by NIOH ENVIS RP Ahmedabad
3. Snake Bite Awareness Workshop-on 16th August 2020, organized by ENVIS-RP, Institute of Wildlife Sciences, ONGC Centre for Advanced Studies, University of Lucknow

10. Website Update status

This is a unique theme area for data collection and dissemination with respect to Biotechnology related to environmental aspects. We have maintained a website on this aspect for last 18 years in the website **URL: <http://www.deskuervis.nic.in>**. This ENVIS Resource Partner was established in June, 2002. The ENVIS RP has valuable information on Environmental Biotechnology, which is regularly updated, reformed and modified. The general objective of this centre is to collect data and information on recent developments in the field of ‘Environmental Biotechnology’ from different major laboratories and libraries throughout the world and to keep the database of our website updated, which is very useful, helpful and user friendly. The website is frequently accessed by researchers, students, industry personals and NGOs who are working in this and related fields and is also in high demand among general public. The centre publishes newsletters, abstract volumes, special books, leaflets, mobile apps and other knowledge products in a regular time interval. The centre also organizes workshop/ seminar/ training/ exhibition/ outreach programmes on a regular basis. The Ministry has entrusted the centre with running new programmes, viz. Green Skill Development Programme (GSDP) and Grid Based Decision Support System (GRIDSS) - for Sustainable Management of Natural Resources.

The centre also provides query services to researchers, scientific communities and other concerned people. In most of the cases replies to the specific queries are given and in a few specific cases some relevant references are provided for better information supports. The numerical data are statistically incorporated in our website with regular updating.

DESKUENVIS RP Website (deskuenvis.nic.in)



Name of website	URL	Status of reconstruction	Year	Frequency of updating the website	Subject-specific data updating	Publication updated on website	Information
DESKU ENVIS RP, Klyani, Nadia, W.B	deskuenvis.nic.in	Not reconstructed	2020-21	Weekly (The ENVIS website designed and updated regularly according to ENVIS secretariat guideline, All static pages are updated weekly,	Environmental Biotechnology	The ENVIS RP publishes regularly in every year 1. Four Newsletters 2. Two Abstract volumes 3. Leaflet 4. Mobile Apps 5. Edited books 6. Review articles	We are collecting the data from different major laboratories and libraries throughout the world and to keep the database of our website updated, which is very useful, helpful and user friendly. The website is frequently accessed by researchers, students, industry personals and NGOs who are working in this and related fields and is also in high

				The dynamic database pages are updated monthly, New information are highlighted with blinking, Old information are stored in archive)		7. Hand outs related to theme area 8. Articles in both English and vernacular languages	demand among general public. The centre publishes newsletters, abstract volumes, special books, leaflets, mobile apps and other knowledge products in a regular time interval.
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11. User Engagement and Interaction

<i>User engagement and interaction</i>		<i>FY 2018-19</i>	<i>FY 2019-20</i>	<i>FY 2020-21</i>
i.	Total number of visits	1,57,541	NA	NA
ii.	Number of unique visits	**		NA
iii.	Reports Downloaded/Read	**		NA
iv.	Total Number of Queries received (Online, E-mail, Postal & Physical	377	382	210
v.	Number of Queries responded	377	382	210
vi.	Grade received	NA	NA	NA

**Since our Website is not restructured, we don't have the count.

** Due to following constrains the total of Number of unique visits statistics and Reports Download/ Read statistics, could not be met with. As our website is not restructured as per MOEF &CC point of view, so we are not running our statistical command functioned. The database link folder is not properly running. For security reason, NIC blocked our command base dynamic pages. So we are unable to provide such type of statistics.

11.1 Query-Answer Statistics 2020-21

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)			
Email (official NIC server)	10	10	NA
Postal/Telephonic (incl. hand post)	98	98	NA
Physical	102	102	NA

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

Activity/ Target	Achievements
Centre’s proposed activities 2020-21	
<u>Regular activities</u>	
Website development	<p>We have collected the data on thematic area “Environmental Biotechnology” from different sources like, libraries, different journals, reviews, Govt. statistics, application case studies, NGOs, internets and to generate a database and published in website with (descriptive, numeric, pictorial, geospatial, etc.). We have maintained and updated subject-specific database, produce value-added products such as: educational-kits on various themes, photo bank, mobile Apps, case studies, success stories etc. The centre has published four newsletters, two abstract volumes and also published leaflets, awareness posters related to Covis-19, thematic poster on special day, hand out etc. Due to COVID-19 pandemic the centre have organized webinars, online competitions, special day celebrations such as (Environmental Day and International Ozone Day) through online mode.</p>
Extension & Outreach Programme	<p>Due to COVID-19 pandemic the centre has organized webinars, online competitions, and special day celebrations such as (Environmental Day and International Ozone Day) through online mode.</p> <ul style="list-style-type: none"> • DESKU ENVIS RP celebrated the World Environment Day on 5th June, 2020 through plantation programme in the University premises followed by Webinar. The programme was inaugurated by Honb’le Vice Chancellor Prof Sankar K. Ghosh in presence of University fraternity. • Celebration of International World Ozone Day, on 15th September 2020 an online Drawing & Poster Competition was organized among School children in different categories and College & University students on related issues of Covid-19 Pandemic.

<p>Publications</p>	<p><u>Four volumes of Newsletters (ISSN: 0974 2476)</u></p> <ol style="list-style-type: none"> 1. Biotechnological & Environmental Aspects of COVID-19 (Vol. No. 36, Issue No. 1) 2. Biodiversity and current scenario, (Vol. No. 36, Issue No. 2) 3. Application of CRISPR CAS9 on the Environment, (Vol. No. 37, Issue No. 1) and 4. Green Technology (Vol. No. 37, Issue No. 2) <p><u>Abstract volume</u> Two Volume:36 and 37 (Abstract of research papers related to the Subject)</p> <p><u>Mobile Apps</u></p> <ol style="list-style-type: none"> 1. Awareness of Corona virus 2. Social distancing due to Corona Pandemic 3. People’s Biodiversity Register 4. E-abstract <p><u>Poster</u></p> <ol style="list-style-type: none"> 1. Poster on Covid -19 2. Biodiversity and Covid-19 3. Biodiversity of the Earth 4. Poster on World Wetland Day <p><u>Leaflet/ handout/ brochure</u></p> <ol style="list-style-type: none"> 1. Corona pandemic awareness leaflet in Bengali 2. Precautions about Corona virus leaflet in Bengali 3. Handout on Ozone Day 4. Brochure of Webinar on Care to Biodiversity 5. Brochure of Say No to Plastic Pollution 6. Brochure on World Ozone Day <p><u>Articles In newsletter</u></p> <ol style="list-style-type: none"> 1. Article: ‘COVID-19 In a Nutshell’ In: ENVIS News letter on ‘Biotechnological & environmental aspects of covid-19’. Vol.-36 (1) (ISSN: 0974 2476). 2. Article: ‘Care to Biodiversity for Sustainable Future’ In: ENVIS News letter on ‘Biodiversity and Current Scenario’. Vol.-36 (2) (ISSN: 0974 2476).
<p>Thematic layers for Grid Mapping</p>	<ul style="list-style-type: none"> • Hooghly district map for NES GRID is being prepared such as <ul style="list-style-type: none"> ✓ Tourism and heritage ✓ Total population ✓ Block maps • Population classification of Howrah District was developed <p>Collection of data for various district in West Bengal for NES grid maps (eight assigned districts) in progress</p>

<p>Green Skill Development Programme (GSDP)</p>	<p>The GSDP course on Peoples Biodiversity Register (PBR) was conducted from 2nd -26th March, 2021 in blended mode due to Covid-19 pandemic.</p>
<p>Theme based Database development (National /State/District/Local) on</p>	<ul style="list-style-type: none"> ✓ Database on plants, bacteria, fungi, algae use for Bioremediation of Water Environment- ✓ Bioaccumulation ✓ Phyto remediation ✓ Biotechnology Policy issues <p>Above theme based data were collected. Compilation and analysis under process.</p>
<p>Video clipping on subject areas for awareness programme</p>	<p>Nil</p>
<p>New initiatives taken during the Financial Year (2020-21):</p>	<p><u>Webinar/online competition</u> Due to the COVID-19 pandemic, the DESKU ENVIS Resource Partner on Environmental Biotechnology, University of Kalyani, organized online seminars (webinars) and online competitions through Google meet, YouTube channel & Face book page.</p> <p>1. Webinar on <i>Care to Biodiversity</i> As the theme of the World Environment Day this year was Biodiversity, the DESKU ENVIS RP on Environmental Biotechnology, organized a webinar on CARE to BIODIVERSITY on the occasion of World Environment Day, 5th June, 2020.</p> <p>2. Webinar on <i>Say no to plastic pollution</i> The Webinar on Say No to Plastic Pollution was organized on 18th July, 2020 through <i>Google meet</i> and <i>You Tube</i>.</p> <p>3. Webinar on ‘Promotion of Science’ in the area of <i>Genetic Scissors (CRISPR-Cas9)</i> A webinar on Promotion of Science in the area of Genetic Scissors (CRISPR-Cas9) was organized on 15th October, 2020 by ENVIS RP on Environmental Biotechnology with the collaboration of DST-PURSE programme, University of Kalyani with the association of NASI and INSA.</p> <p>4. Online competition on World Ozone Day On account of the restrictions imposed due to COVID-19 pandemic, the ENVIS RP was only able to organize an online Poster and Drawing Competition to celebrate the World Ozone Day on 16th September, 2020.</p>

12. Budget Allocation and Expenditure patterns (Year Wise)

➤ For 2020-2021

SI. No	Sanctioned Object Head	Total Amount Sanctioned (in Rs.)	Amount Received (in Rs.) (including carry forward)	Expenditure Incurred (in Rs.)	Available Balance (in Rs.)
1	Manpower				
2	Others (Database development, website maintenance, printing of Newsletters & Prakriti Map, contingency, stationery, consumables, AMC, Internet charges, training, inter-centre interaction workshops, expenses on monitoring, ISBEID Database development, Mobile App Development etc.)				
3	Travel				
4	Total				
5	Bank interest during financial year 2020-21				
6	Net balance amount available at the end of financial year (up to 31st March, 2021)				

13. Inventory /Record (Year-wise list of equipment's/ machinery procured under the ENVIS Scheme and/or for training under GSDP and state their use and utility- for last 3 years)

For 2020-21

	Hardware item	Specification	Sanction Order with Date	Date of procurement
Procured from ENVIS Grant	-	-	-	-

For 2019-20

	Hardware item	Specification	Sanction Order with Date	Date of procurement
Procured from ENVIS Grant	-	-	-	-
	-	-	-	-

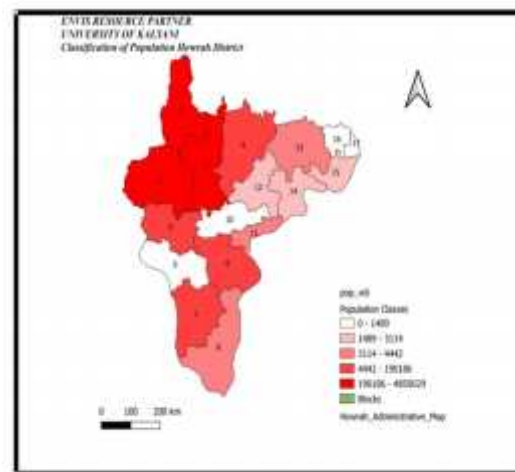
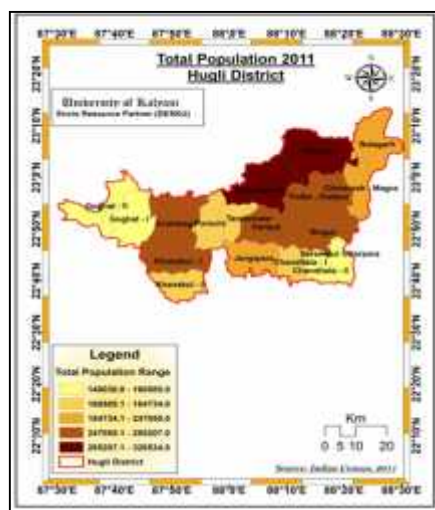
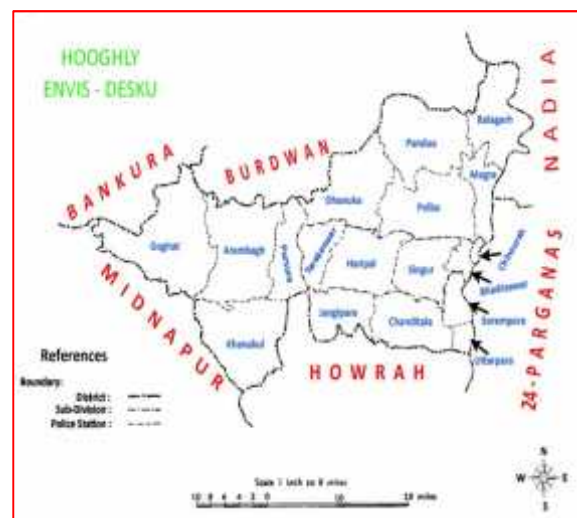
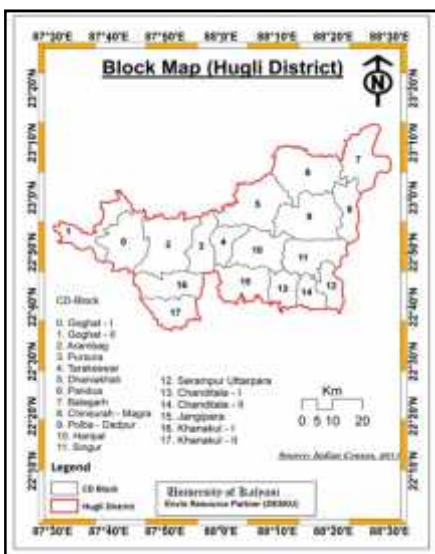
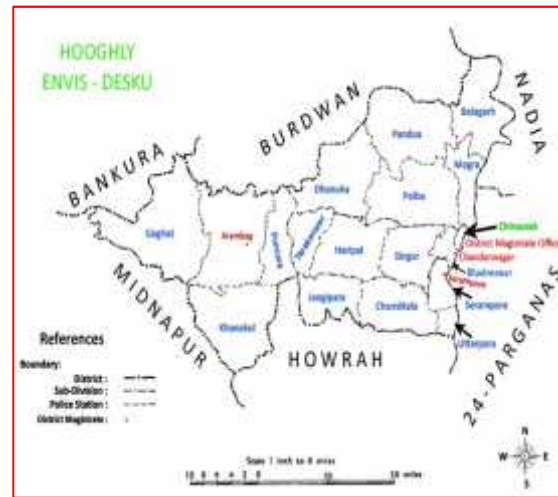
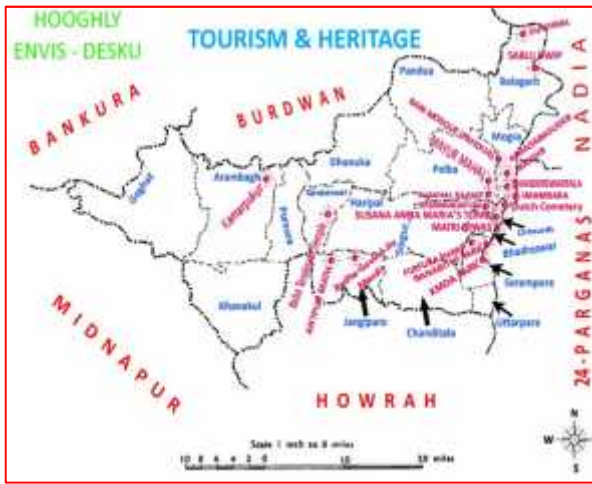
For 2018-19

	Hardware item	Specification	Sanction Order with Date	Date of procurement
Procured from ENVIS Grant	Trolley Bag (To carry ENVIS material for display in seminar/workshop etc.)	22 inch	NA	13/02/2019
	Computer table with CPU hanger (4 nos) (Keeping the computers of ENVIS material for display in seminar/workshop etc.)	NA	NA	06/02/2019
	Revolving Chair (4 nos) (Sitting for Four ENVIS staffs)	NA	NA	06/03/2019
	Godrej Steel Almirah (3 nos) (Keeping the ENVIS files and documents)	NA	NA	9/03/2019, 14/03/2019, 25/03/2019
	AC (4 nos) (ENVIS office room and coordinator chamber)	Carrier 1.5 Tons	-	26/3/2019

14. National Environment Survey (NES)- a Grid-based Resource Information and Decision Support System (GRIDSS) [to be filled by ENVIS Hubs only]

➤ Data availability status under the NES-GRIDSS-ISBEI

- Hooghly district map for NES GRID
- Collection of data for various district in West Bengal for NES grid maps (eight assigned districts), in progress



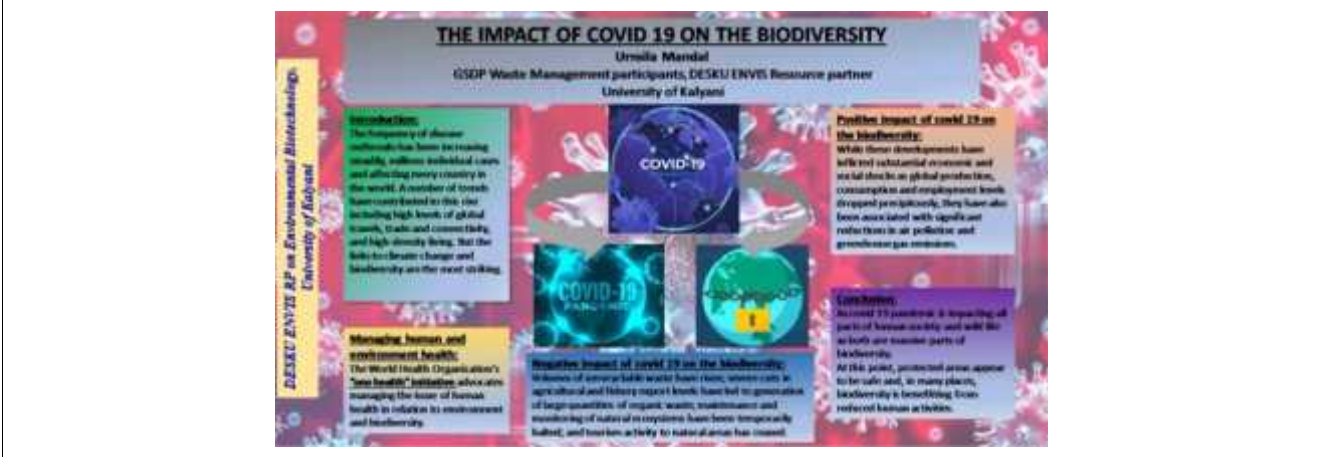
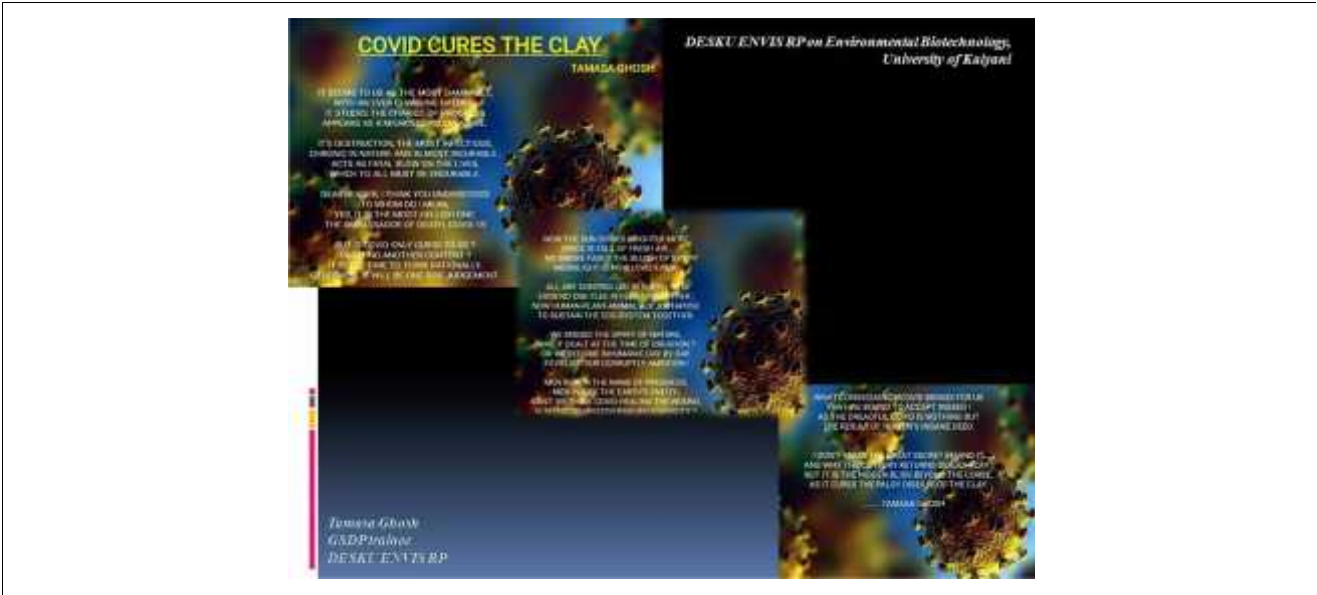
✓ PFMS (Public Financial Management System)

Under process

Others

Posters/ Articles/documentary submitted by GSDP participants for World Environmental Day-2020

Posters



List of Articles

1. Plant Biodiversity Conservation and COVID-19-by Subir Kumar Khawas

Participant of Waste Management Course (GSDP), ENVIS Resource Partner, Kalyani

2. COVID 19: Impact on Environment and Awareness-by *Ayantika Kundu, GSDP Participate of Water Monitoring Course*
3. Biodiversity of plant and animal- by Probhakar Ruidas
4. Effect of ongoing coronavirus pandemic on animal biodiversity -by Deboleena Mukherjee,GSDP participant of Water Pollution Monitoring
5. Environmental factors affecting self esteem-by Abhidipta Paul, GSDP participant of Water Pollution Monitoring
6. Lockdown proven as bliss for Gangetic Dolphin in India-by Tanya Prasad, GSDP participant of Water Pollution Monitoring
7. Environmental monitoring on positive approach of mind –By Sourav Khanrah

Documentary prepared by DESKU ENVIS for World Environment Day-2020

1. Documentary on " Plant Root Prints In Biodiversity " in mp4

Link:https://drive.google.com/file/d/1yHshLjhgn2lpS-LGgp5ItwmWbB_ksgZ_/view?usp=drivesdk

2. Documentary on Positive approach of mind- by Tanushree Das (GSDP Participants, DESKU ENVIS)

Link:<https://drive.google.com/file/d/1BZLteK3f4MkkMb3Sc8XxxwDrFuDqWnmT/view?usp=drivesdk>

Activities to be undertaken by the ENVIS RP in 2021-22

1. Website development and regular updation of ENVIS RP

- Maintain and update subject-specific database
- Preparation of value-added products such as:
 - ✓ Educational-kits on various themes
 - ✓ Photo bank
 - ✓ Knowledge product CDs
 - ✓ Case studies
 - ✓ Success stories
 - ✓ Mobile apps
 - ✓ Environmental videos
- Documentation and analysis of traditional knowledge
- Analysis of state of Art in Biotechnology research
- Impact of Education network in environmental Biotechnology

2. Development of descriptive/numerical databases and maintaining environmental information database for district wise of West Bengal on the following indicative list:

- (a) Administrative Profile
- (b) Socio-economic Profile
- (c) Agriculture
- (d) Industry
- (e) Tourism & Heritage
- (f) Ecology
- (g) Biodiversity
- (h) Forest Resources
- (i) Other Natural Resources (water bodies, wetlands, corals, mangroves etc)
- (j) Surface and Ground Water Resources
- (k) Air Pollution
- (l) Water Pollution
- (m) Usage of Energy
- (n) Sanitation
- (o) Waste and waste management
- (p) Disaster (natural and man-made)

3. Building Repository of Environmental Knowledge –

- ✓ News letters on thematic areas –04 nos/ year
- ✓ Abstract volumes-02 nos/year
- ✓ Leaflet on thematic areas
- ✓ Awareness posters/ handout

4. Grid Based Decision Support System (GRIDSS) –as ministry assigned

- **Eight** District of West Bengal will be surveyed and grid map prepared on the assigned environmental parameters.

5. Green Skill Development Programme (GSDP)

- ✓ Valuation of Ecosystem Services and Green GDP
- ✓ Bird Identification and Basic Ornithology
- ✓ Pollution Monitoring: Water

6. Extension & Outreach Programme

- ✓ Conducting webinars on different thematic areas
 - ✓ Special day celebration such as (Environment day, ozone day, wetland day etc through online platform by conduction quiz, drawing, debate etc) and celebration of other special programmes as instructed by ENVIS secretary
7. Undertake Studies/ Case Studies/ Working Papers on issues facing the State/ country-
 8. Publication of papers on ENVIS Focal Point by
 9. Publish four (Quarterly) ENVIS Newsletters, highlighting case studies and local success stories and circulate to concerned line departments of the State Governments, and district administrators and Ministers concerned
 10. Development of glossary on the assigned Subject Area
 11. Development of database of Experts from the State
 12. Uploading of latest news on status of environment and related issues.