Celebration of International Day for Biological Diversity, 22nd May, 2021

Report on State level online programs organized for celebrating the IDB 2021 Event

Organized by

Assam State Biodiversity Board in collaboration with National Biodiversity Authority

Assam State Biodiversity Board
Aranya Bhawan, 2nd Floor, Panjabari, Guwahati-781037
www.asbb.gov,in

Brief Report on celebration of International Day for Biological Diversity on 22nd May,2021

The Assam State Biodiversity Board (ASBB) in collaboration with National Biodiversity Authority celebrated the International Day for Biological Diversity on 22nd May, 2021 by organizing various online events for generating awareness among stakeholders and local people. The slogan for this year's celebration is 'We are part of the Solution # For Nature' which is in continuation of last year's overarching theme, "Our solutions are in nature". The 2021 slogan highlights that from nature-based solutions to climate, health issues, food and water security, and sustainable livelihoods, biodiversity is the foundation upon which we can build back better. It emphasizes hope, solidarity and the importance of working together at all levels to build a future, of life, in harmony with nature. The logo design itself represents interconnectedness of all life on earth.

Due to the present Pandemic situation, the Assam State Biodiversity Board organized a series of online programs as part of the awareness campaign to highlight importance of biodiversity, its interconnectedness with the way of our life and how the solutions for our problems lies with nature and how we can be part of the solution for safeguarding nature.

The following online programs were organized to celebrate the event:

1. State level Painting Competition for school children of Class III-Class VIII
2. State level Speech (Elocution) Competition for school students of Class IX-XII
3. State level Photography Competition for College and University Students
4. A three day 'Webinar Series on Biodiversity' were also organized from 20th May -22nd May, 2021 where six distinguished experts presented valuable talks on six important aspects of biodiversity:
    i. Livelihood & Biological Diversity of NE India by Dr. Abhinandan Saikia, Assistant Professor, TISS, Guwahati
    ii. People's Biodiversity Registers- its importance in conserving biodiversity by Dr. Narayan Sharma, Assistant Professor, Cotton University, Guwahati
    iii. Fresh Water Ecosystems & its Conservation by Dr. Arup Kr. Sarma, Professor, IIT, Guwahati
    iv. Green Gold- a step towards Green Economy by Smt. Dimpi Bora, IFS, Deputy Mission Director, Assam Bamboo Mission

v. Climate Change in NE India: Importance of scientific understanding in local context by Dr. Partha Jyoti Das, Aaranyak, Guwahati and

vi. We are part of the solution # For Nature by Sri K.S.P.V. Pavan Kumar, IFS, Addl. PCCF (Biodiversity & CC) & Member Secretary-ASBB.

The webinar series was successfully conducted with 55-70 participants attending each session and having a good and lively interaction with all the speakers. Around 340 number participants registered for the three days webinar series. A detailed technical report of the webinar series is attached as **Annexure-I.**

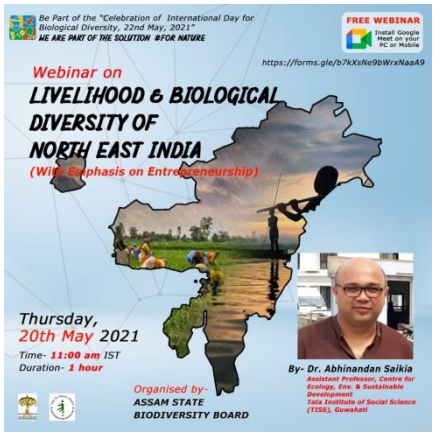
5. An awareness generation message on the theme 'We are part of the solution# For Nature' in local language was released in RED FM93.5 Channel on 22nd May 2021.

6. Awareness generation Audio- Video Message on the theme in local language was also released in two popular local news channel- DY 365 and Newslive on 22nd May 2021.

The advertisement for the online competitions was published in local newspapers for greater outreach which was also widely circulated in social media platform and official website. The results were announced on 24th and 25th May, 2021 through social media-Facebook page and website. The prizes of the competitions will be distributed shortly depending upon the present situation and all the participants of the competitions will be provided 'participation certificate'.

Posters for Online Competitions organized as part of the IDB 2021

Posters for Webinar Series on Biodiversity organized as part of the IDB 2021



First Session

Second Session

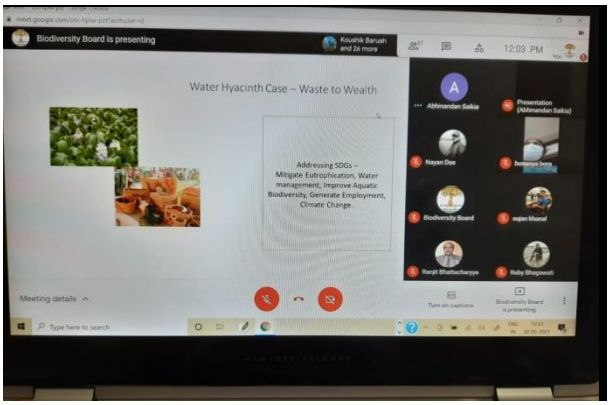
Third Session

Sixth Session

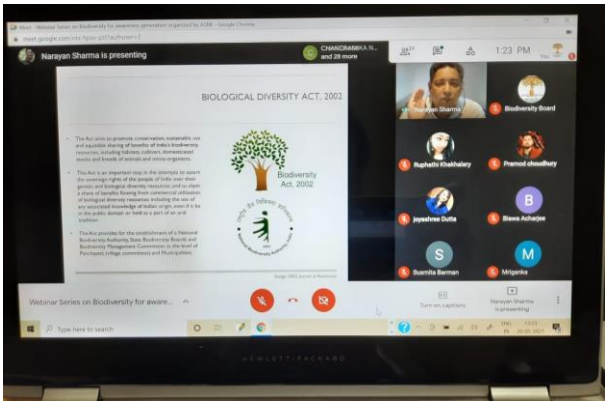
Fourth Session

Fifth Session

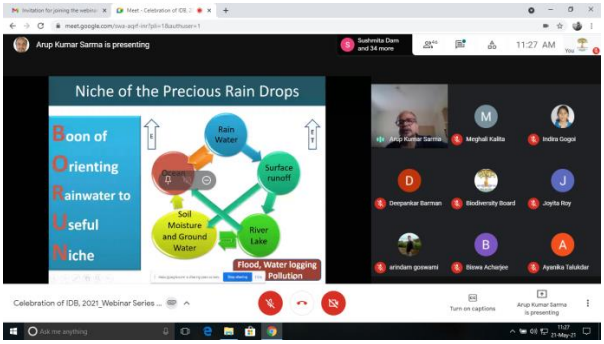
Few Screen shots of the Webinar series



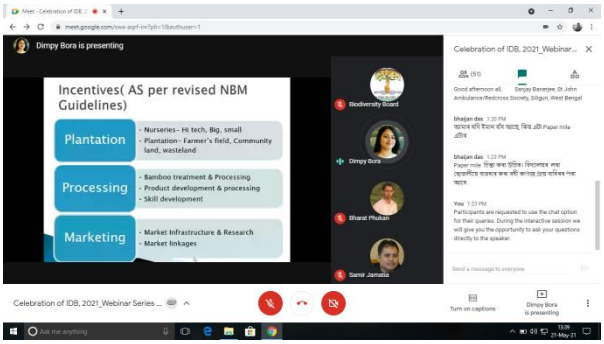
First session on 20th May, 2021



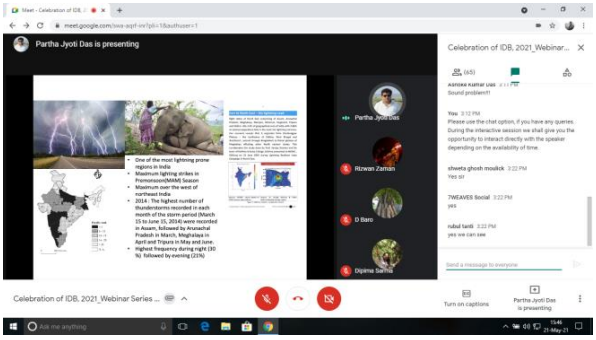
Second session on 20th May, 2021



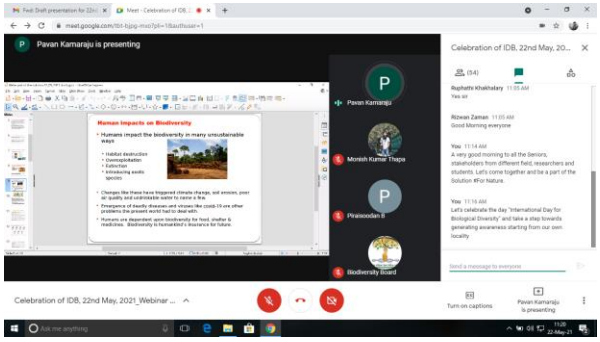
First session on 21st May, 2021



Second session on 21st May, 2021



Third session on 21st May, 2021



Session on 22nd May, 2021

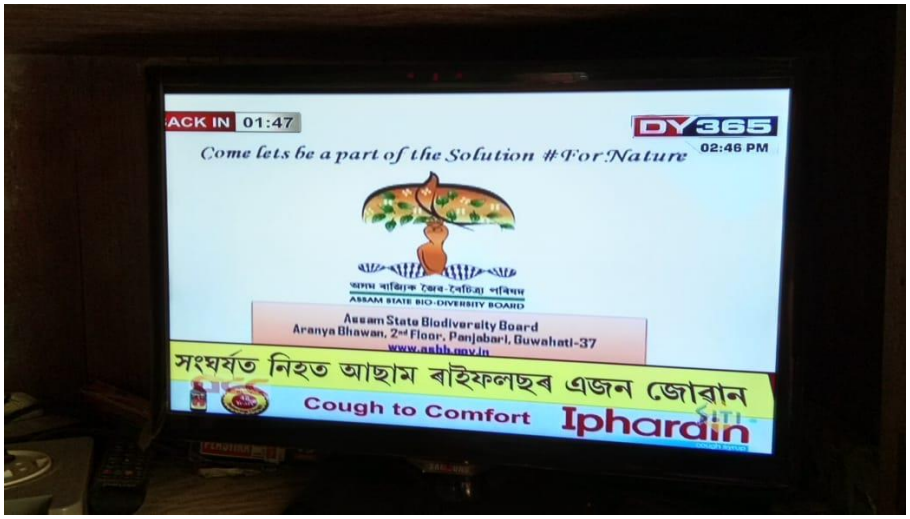
Awareness generation message on the IDB Theme released on RED FM93.5

জৈৱবৈচিত্র্য জীৱনৰ আধাৰ,
জৈৱবৈচিত্র্য অবিহনে জীৱন আৰু জীৱজগতলৈ নামি আহিব অন্ধকাৰ!
প্রকৃতিতে আছে সকলো সমস্যাৰ সমাধান
আৰু আমিয়েই এই সমাধানৰ অংশীদাৰ!

আজি ২২ মে' আন্তর্জাতিক জৈৱবৈচিত্র্য দিৱস আৰু চলিত বর্ষৰ এই দিৱসৰ মূল বিষয়বস্তু হৈছে "We're part of the solution #ForNature" অর্থাৎ 'আমি সমাধানৰ এটা অংশ # প্রকৃতিৰ বাবে'। আহক! আমি সকলোৱে মিলি আজিৰ দিনটোতে সংকল্প লওঁ প্রকৃতিক সুস্থ কৰি ৰখাৰ, দায়িত্ব লওঁ জৈৱবৈচিত্র্যক সুৰক্ষা প্রদান ও সংৰক্ষণৰ ব্যবস্থা লোৱাৰ আৰু ভবিষ্যত প্রজন্মৰ বাবে কৰো আহক প্রাকৃতিক সম্পদসমূহৰ বহনক্ষম ব্যৱহাৰ। অসম ৰাজ্যিক জৈৱবৈচিত্র্য পৰিষদ (Assam State Biodiversity Board), অসমৰ দ্বাৰা জনজাগৰণৰ উদ্দেশ্যে প্রচাৰিত।

Link for the Audio-Video message for awareness generation released on 22nd May 2021 at Facebook and two regional News channel

https://www.facebook.com/100005641723226/videos/1675298969334811/



Results of the online State level competitions for school students

Painting Competition

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP A- CLASS III-V

1ST PRIZE

1ST PRIZE WINNER

Name: ANUSHKA NATH
Class: V
School: Maharishi Vidya Mandir-IV, Barsajai

Congratulations to the Winner

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP A- CLASS III-V

2nd PRIZE

2nd PRIZE WINNER

Name: Persiya Sultana
Class: V
School: Spring Dales Academy, Bhangarpar

Congratulations to the Winner

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP A- CLASS III-V

3rd PRIZE

3rd PRIZE WINNER

NO PHOTO

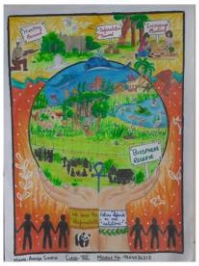
Name: Krinjal Kaustav Nath
Class: IV
School: Hindustani Kandriya Vidyalaya

Congratulations to the Winner

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP B- CLASS VI-VIII

1ST PRIZE



1ST PRIZE WINNER

Name: Aniqa Shirin
Class: VIII
School: Delhi Public School, Dhaligaon

Congratulations to the Winner

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP B- CLASS VI-VIII

2nd PRIZE

2nd PRIZE WINNER

Name: Sagarika Sarania
Class: VII
School: Guwahati Public School

Congratulations to the Winner

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PAINTING COMPETITION
Theme: We are part of the Solution #For Nature
GROUP B- CLASS VI-VIII

3rd PRIZE

3rd PRIZE WINNER

Name: Krishti Bhakta
Class: VIII
School: St. Mary's School

Congratulations to the Winner

Speech (Elocution) Competition

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021

RESULT OF ONLINE STATE LEVEL SPEECH (ELOCUTION) COMPETITION

Theme: We are part of the Solution #For Nature

GROUP A- CLASS IX-X

1ST PRIZE WINNER

Name: MONMEETA KASHYAP
Class: IX
School: Little Flower Higher Secondary School, Dibrugarh

2nd PRIZE WINNER

Name: TAHSEEN BARBHUIYA
Class: IX
School: Spring Dales Academy,Bhangarpar,Cachar

3rd PRIZE WINNER

Name: MAHDI SALMAN BARBHUIYA
Class: IX
School: Spring Dales Academy,Bhangarpar,Cachar

Congratulations to the Winners

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021

RESULT OF ONLINE STATE LEVEL SPEECH (ELOCUTION) COMPETITION

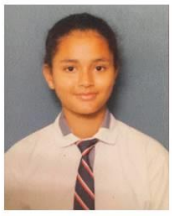
Theme: We are part of the Solution #For Nature

GROUP B - CLASS XI-XII

1ST PRIZE WINNER

Name: ANANYA SARMAH
Class: XII
School: Kendriya Vidyalaya No.IV,Central University,Tezpur

2nd PRIZE WINNER



Name: AKANGSHYA BORA
Class: XI
School: Maria's Public School, R.G. Baruah Road, Guwahati

3rd PRIZE WINNER

Name: GRETASKI ZEETA KASHYAP
Class: XI
School: Little Flower School, Hatigaon,Guwahati

Congratulations to the Winners

State level Photography Competition for Collge and University Students

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PHOTOGRAPHY COMPETITION
Theme: Lesser-Known Threatened Species of Assam
For College & University Students of Assam

1ST PRIZE

Caption: Master of Camouflage

1ST PRIZE WINNER

Name: Imon Abedin
B.Sc 5th Semester
Department of Zoology
Tinsukia College, Tinsukia

Congratulation to the Winners

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PHOTOGRAPHY COMPETITION
Theme: Lesser-Known Threatened Species of Assam
For College & University Students of Assam

2nd PRIZE

Caption: Black-Breasted Parrotbill

2nd PRIZE WINNER

Name: Tapan Moran
M.Sc 1st Semester
Dept of Environmental Science
Gauhati University

Congratulation to the Winners

22 MAY 2021 BIODIVERSITY DAY
We're part of the solution #ForNature

Celebration of International Day for Biological Diversity, 22nd May, 2021
RESULT OF ONLINE STATE LEVEL PHOTOGRAPHY COMPETITION
Theme: Lesser-Known Threatened Species of Assam
For College & University Students of Assam

3rd PRIZE

Caption: Woolly-necked Stork

3rd PRIZE WINNER

Name: Shyamal Saikia
M.Sc 3rd Semester
Dept. of Life Sciences
Dibrugarh University

Congratulation to the Winners

News Paper Reporting of the Event

The Sentinel
of this land, for its people

International Day for Biological Diversity celebrated

A CORRESPONDENT

PATHSALA, May 22: The Assam State Biodiversity Board (ASBB), in collaboration with National Biodiversity Authority, celebrated the International Day for Biological Diversity on Saturday by organizing various online events for generating awareness among stakeholders and local people. This event is celebrated every year on May 22 across the globe. The slogan for this year's celebration is 'We are part of the Solution # For Nature' which is in continuation of last year's theme, 'Our solutions are in nature'.

The slogan highlights that from nature-based solutions to climate, health issues, food and water security, and sustainable livelihood, biodiversity is the foundation upon which we can build back better. It emphasizes hope, solidarity and the importance of working together at all levels to build a future, of life, in harmony with nature.

Due to the present pandemic situation, the Assam State Biodiversity Board organized a series of online programmes as part of the awareness campaign to highlight importance of biodiversity, its interconnectedness with the way of our life and how the solutions for our problems lies with nature and how we can be part of the solution for safeguarding nature. Various State-level online competitive events such as painting competition for school children, speech (elocution) competition for school students and photography competition for college and university students were organized.

Along with these competitions, three days 'Webinar Series on Biodiversity' were also organized from May 20 to May 22 where six distinguished experts presented valuable talks on six important aspects of biodiversity. More than 500 participants attended the three-day webinar series.

Guwahati English Edition
May 23, 2021 Page No. 7

Newspaper Advertisement of the Online Competitions for IDB 2021

knowledge of the incident, including those who like to submit any memorandum or any suggestions/opinion may do so on the above time and dates in the venues as mentioned.

Sd/- Special Officer to the Commissioner
Janasanyog/D/183/21 **Central Assam Division**

Be part of the Celebration of International Day for Biological Diversity 22nd May, 2021
Theme: We are part of the Solutions # For Nature

State Level Competitions for students of Assam for awareness generation
(Online Submission through Email only)

1. **Online Painting Competition for School students (Submit the entries at the designated email against each)**
   a. Group-A : Class III- Class V (Email: **biodaypainting01@gmail.com**)
   b. Group-B : Class VI- Class VIII (Email: **biodaypainting02@gmail.com**)
   Theme for both Categories: We are part of the Solution # For Nature
   Size of Paper: A4 Size or Legal Size
   PRIZES: Memento and Certificate to 1st, 2nd and 3rd prize winners.
2. **Online Speech Competition (Elocution) for School students (Submit the entries at the designated email against each)**
   a. Group-A : Class IX- Class X (Email: **asbb.speechcompetition01@gmail.com**)
   b. Group-B : Class XI- Class XII (Email: **asbb.speechcompetition02@gmail.com**)
   Theme: We are part of the Solution # For Nature
   Language: English & Assamese
   Video Duration: 2-3 Minutes
   PRIZES: Memento and Certificate to 1st, 2nd and 3rd prize winners.
3. **Photography Competition for College and University students (Submit the entries at the designated email)**
   Eligibility: College & University Students
   Theme: Lesser known Threatened Species of Assam
   Email for submission: **asbb.photoarchive@gmail.com**
   PRIZES: Cash prize, Memento and Certificate to 1st, 2nd and 3rd prize winners.

For detail guidelines of the competitions, log on to our website **www.asbb.gov.in**
Last Date of Submission of Entries: On or before 5 PM of 15th May, 2021
All Participants will get e-Participation Certificate on request.

22 MAY 2021 BIODIVERSITY DAY

Janasanyog/D/179/21

Samsung will donate $3 million to the Centre and States of Uttar Pradesh and Tamil Nadu, and provide $2 million worth of medical supplies, including 100 oxygen concentrators, 3,000 oxygen cylinders, and one million LDS syringes (to UP and TN), a statement said.

Paytm said Paytm Foundation will set up oxygen plants in 12-13 cities. These oxygen plants would be directly installed at hospitals. It is in dialogue with State governments and hospitals to set up these oxygen plants that will be provided free of cost to government hospitals by Paytm Foundation. – PTI

Tata Group to buil

60 cryogenic tankers to

NEW DELHI, May 4: Tata Group will airlift 60 cryogenic oxygen tankers from overseas and build around 400 oxygen generating units that can be used by hospitals in smaller towns amid the pandemic, according to a senior official of Tata Sons.

Besides, the group makes around 5,000 beds available for COVID-care with its various firms coming together in the fight against the second wave of the COVID-19, the official added.

The group is also reskilling some of its staff, especially within Indian Hotels, which has converted many of its hotels into COVID-care facilities to prevent a shortage of support staff for the patients.

"As we speak, we are making available around 900 MT of oxygen per day, that is Tata Steel alone. Our people in Tata

Assam Tribune, 5th May 2021

ASOMIYA KHABAR
5th May 2021

অসমীয়া খবৰ

Be part of the Celebration of International Day for Biological Diversity 22nd May, 2021
Theme: We are part of the Solutions # For Nature
State Level Competitions for students of Assam for awareness generation
(Online Submission through Email only)
1. Online Painting Competition for School students (Submit the entries at the designated email against each)
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b. Group-B : Class VI- Class VIII (Email: biodaypainting02@gmail.com)
Theme for both Categories: We are part of the Solution # For Nature
Size of Paper: A4 Size or Legal Size
PRIZES: Memento and Certificate to 1st, 2nd and 3rd prize winners.
2. Online Speech Competition (Elocution) for School students (Submit the entries at the designated email against each)
a. Group-A : Class IX- Class X (Email: asbb.speechcompetition01@gmail.com)
b. Group-B : Class XI- Class XII (Email: asbb.speechcompetition02@gmail.com)
Theme: We are part of the Solution # For Nature
Language: English & Assamese
Video Duration: 2-3 Minutes
PRIZES: Memento and Certificate to 1st, 2nd and 3rd prize winners.
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22 MAY 2021 BIODIVERSITY DAY
Janasanyog/D/180/21

GNRC

Asomiya Khabor, 5th May 2021

Annexure-I

Technical Report

'Webinar Series on Biodiversity'
for awareness generation among students, researchers and local stakeholders

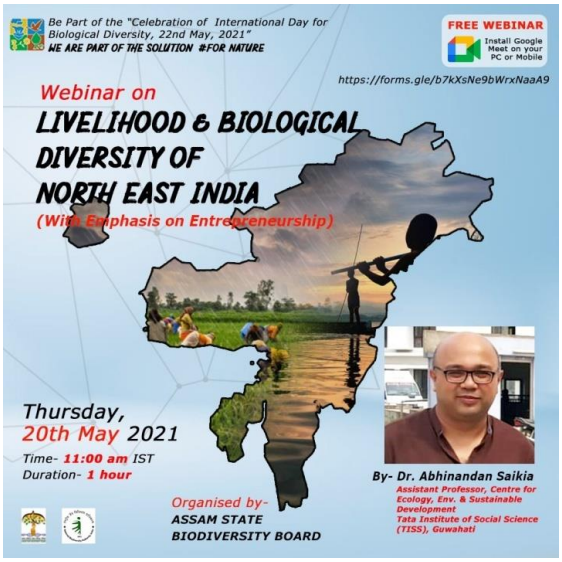
Organized by

Assam State Biodiversity Board in collaboration with National Biodiversity Authority

Introduction: The Assam State Biodiversity Board in collaboration with National Biodiversity Authority organized a three day long webinar series from 20th to 22nd May, 2021 to celebrate the International Day for Biological Diversity, 2021 with the theme "We are part of the Solution. #For Nature". The aim of holding this webinar series is to generate awareness on biodiversity among students, researchers, local communities and other stakeholders. Eminent experts from different institutions of the State have been invited as speakers on the specified theme. The session was of one hour duration conducted through the Google Meet virtual platform.

A brief discussions on the six webinar sessions are highlighted below: .

Session 1: Date: 20th May, 2021 Time: 11.00 AM (IST)
Topic: Livelihood & biological diversity of NE India (with emphasis on Entrepreneurship).
Speaker: Dr. Abhinandan Saikia, Assistant Professor, Centre for Ecology, Environment. & Sustainable Development, TISS, Guwahati.



The first session highlighted the following three important points:

- Relation between land use pattern and social capital in NE India.
- Significance of land use pattern and
- Integration of social capital.

Dr. Saikia reiterated that Biodiversity beyond its importance as a conservation science and climate change implications has a significant role in providing sustainable livelihood especially considering the rural and forest sectors. He also highlighted some important points on livelihood and the rich biodiversity of NE India and the traditional ecological knowledges associated with them. Some of the important points of the session are highlighted below:

a. Livelihood is a means of making a living. It encompasses people's capabilities, assets, income and activities required to secure the necessities of life.
b. Livelihood is sustainable when it enables people to cope with and recover from shocks and stress (such as natural disasters and economic or social upheavals) and enhance their well-being and that of future generations without undermining the natural environment or resource base.
c. The North East India comprises of 8 states, 2 biodiversity hotspots, 2 bio-geographic zones, three Ramsar sites, Brahmaputra, Barak and Irrawaddy River basin, 22 elephant corridors out of 88 in India and more than 200 tribal communities. Besides NE is rich in plantation sector-Tea, Rubber, Oil Palm, Oil refineries etc.

Dr. Saikia also highlighted the theory of Economic Development where he mentioned:

a. Economy evolves due to the endogenous emergence of novelty and entrepreneurial action is a creative response to that.
b. The function of entrepreneurs in the economic sphere is **innovations**, which is a creative response.

Dr. Saikia also highlighted few points of land use and transforming changes in land use. He mentioned about practice in a common land, transfer of land ownership, jhum cultivation in NE states and its dynamic status and possibility of innovation, changes in land-use from Jhum cultivation to terrace cultivation etc.

At the end, Dr. Saikia cited one good example of Water Hyacinth and its usage by the SHGs and local entrepreneurs in Assam. He added that "Water Hyacinth from Waste to Wealth" is a good example addressing SDGs like mitigating eutrophication, water management, improve aquatic biodiversity, generate employment and combat climate change issues.

Session 2: Date: 20th May, 2021;Time: 1.00 PM (IST)
Topic: People's Biodiversity Register-Its importance in conserving biodiversity**.**
Speaker: Dr. Narayan Sharma, Assistant Professor, Dept. of Environmental Biology & Wildlife Sciences, Cotton University, Guwahati**.**

Dr. Narayan Sharma at the very beginning of his presentation highlighted few examples of bio-resource piracy by the developed nations from the developing countries to make the audience understand why the Convention on Biological Diversity and Biological Diversity Act, 2002 came into force. He cited the examples of patenting of Neem and Conagra and Atta case, how this Indian origin age old practices and traditional knowledge was patented by the European and U.S patent office and later was forced to revoke. Coming to his presentation, Dr. Sharma enlightened the participants on the following key points:

a. The concept of Community Register (CR) was launched by the Foundation for Revitalisation of Local Health Traditions (FRLHT) during 1994.Through the workshop at the IISc in Bangalore on April 1995, the Community Biodiversity Register (CBR) program was launched by FRLHT, as programme focussed on documenting community based knowledge of medicinal plants and their uses. The program's name was changed from community to "People's" Biodiversity Register in 1995 to reflect that not all local knowledge is community generated and shared freely among community members. Most systematic attempt in the preparation of PBR at the national level in India initiated in 1996-98 by Biodiversity Conservation Prioritisation Programme (BCPP) sponsored by WWF and technically supported by network of IISc, Bangalore.

b. A PBR is an official record containing comprehensive information on availability and knowledge of local biological resources, their medicinal or any other use or any other traditional knowledge associated with them. The main function of the BMC (Biodiversity Management Committee) is to prepare PBRs in consultation with local people. According to Biological Diversity Act, 2002, institutions of local state government are required to set up BMCs in their respective areas for conservation, sustainable use, and documentation of biodiversity and chronicling of knowledge relating to biodiversity. National Biodiversity Authority issued a set of guidelines on developing a PBR in 2009 which was subsequently revised in 2013 based on wide consultations and experiences gained in developing a PBR.

c. The process of PBR preparation involves the following steps:

Step 1: Formation of Biodiversity Management Committee (BMC)

Step 2: Sensitization of the public about the study, survey and possible management

Step 3: Training of members in identification and collection of data on biological resources and traditional knowledge

Step 4: Collection of data. Data collections includes review of literature on the natural resources of the districts, Participatory Rural Appraisal (PRAs) at village level, household interviews, individual interviews with village leaders and knowledgeable individuals, household heads, key actors of the panchayat raj institutions and NGOs and direct field observations

Step 5: Analysis and validation of data in consultation with technical support group and BMC

Step 6: Preparation of People's Biodiversity Register (PBR)

Step 7: Computerization of information and resources

d. There is/will be a Technical Support Group (TSG) at each district which will assist the BMCs in its operation & Preparation of PBR. TSG will comprise of Govt. officials (Forest dept, Agriculture, Horticulture, Fishery, educational & research institutes), Local Knowledgeable persons in biodiversity issues, Experts from NGOs, Local Herbal practitioners (Bez, Ojha etc), The TSG will also assist BMCs in maintaining, authenticating and validation of the PBR.

Dr. Sharma also explained in details about all the PBR formats staring from crop plants, fruit plants to domestic biodiversity, wild biodiversity, urban flora and fauna plates and the process of its documentation. He also explained about how a PBR of forest area or fringe forest village can be prepared, the important guidelines and methodology to follow in preparation of PBR. He also added that after the preparation of PBR the BMC should come up with an Action Plan which shall include conservation of the bio-resources available under its jurisdiction, training requirement for the BMC personnel, list of potential items for consideration for registration as Geographical indicators etc, micro plan for sustainable use of local biodiversity including medicinal plants associated with Traditional Knowledge.

He also mentioned about some of the challenges in the process of PBR preparation:

i. Inventorying of elements of biodiversity with hundreds of thousands of entities; species, genes, ecosystems, all exhibiting tremendous variation in space and time. Given the existing paucity of information this would require putting in place a system that will draw on much relevant information on present status, on-going processes, and historical trends that rests with the country's barefoot ecologists, often illiterate, and is largely embodied in oral traditions.
ii. Many uses of biodiversity that will need to be documented are also in the informal sector, and are often unrecorded. Much of this informal body of information is largely derived through a trial and error process, and is a mixture of empirically valid knowledge commingled with beliefs that may not stand scrutiny.
iii. All this information, therefore, needs to be carefully assembled and validated. While organizing this information, we will need to keep in view intellectual property rights concerns and guard the interests of all segments of our population, of the tribal, of the dispensers of herbal medicines, as well as those of modern enterprises such as pharmaceutical industry.

At the end of his presentation, Dr. Sharma quoted the reference of Gadgil 2003, Journal of Biosciences and put the way forward among the audience. He said that preparation of PBR is a stupendous task. Its execution will not only require cross-disciplinary scientific activities, but more importantly the conduct of a cross-cultural dialogue amongst scientists, scholars in the classical tradition such as Aurvedic or Yunani practitioners, and holders of folk traditions and knowledge. This is a tremendous opportunity for the scientific community to evolve a new, people oriented approach to doing science and managing information. One of our major national failures over the fifty-five years of independence has been in the field of primary education. The Literacy Mission, launched by the Government in late 1980s, and pursued with such vigour by large numbers of volunteers has undoubtedly been one of the most significant achievements over these years. The challenge of working with people to document biodiversity and associated knowledge could develop into a mission that may be a worthy successor to the Literacy Mission.

Session 3: Date: 21st May, 2021; Time: 11.00 AM (IST)
Topic: Fresh water Ecosystem & its Conservation.
Speaker: Prof. Arup Kumar Sarma, Dept. of Civil Engineering, IIT Guwahati**.**

Dr. Arup Kumar Sarma highlighted and explained the following points:

a. Water Foot print: Blue, Green and Gray water. Niche of the precious rain drops.
b. Fresh water ecosystem and its sub-ecosystem.
c. Watershed and watershed management aims which

aims at optimal utilization and development of water, soil, vegetation and human being of the Watershed.

d. Climate Change and Climate Change Impact projection in NE India-Changes in Average Annual Precipitation in Eastern part of NE India., Southern Part of NE India, Western and Middle part of NE India citing examples and showing the trend of last 10 to 20 years
e. Uncertainty in Climate Change and Global Warming Projection which is a major challenge. Finding sustainable solution to climate change impacted problem.

Dr. Sarma put utmost interest in some concerns of Freshwater ecosystems of NE India like:

a. The river basin of NE India suffering from flood, watershed degradation and riverbank erosion, lack of modernized irrigation, navigation and water tourism and also scarcity of potable water in interior area.
b. Excessive use of ground water in winter lowers the ground water table and we are having more fluoride bearing ground water.
c. Sustainable approach of rain water management and application, rainwater harvesting method.

Dr. Sarma also highlighted some of the important facts of lake/reservoir and wetland ecosystem of NE India:

a. In India, Assam has 7th rank (Sarma K.P. 2016) so far number of wetland is concerned.
b. If we look into the freshwater wetland then Assam will definitely come to a higher position, a formal study on this aspects is not there though.
c. Most of the wetlands were formed due to change of course by river or formation of oxbow lake and these wetlands provides lots of ecosystem services to the neighbouring people and habitats of many flora fauna.
d. Many of these wetlands are shrinking due to encroachment and alteration is happening as many of these wetlands due to construction of flood embankment have lost its connectivity with rivers, which it used to have originally.

Dr. Sarma also emphasises on the Ecological Management Practices (EMPs) to bring back ecological balance of watersheds by improving infiltration by optimal combination of vegetative measures to enhance water availability in lean period, to control surface erosion and thus flood moderation. He also mentioned about some of the projects carried out by IIT, Guwahati on watershed management and integrated land use planning & water resource management in the hilly areas of Guwahati city.

<u>Session 4:</u> Date: 21st May, 2021 ; Time: 1.00 PM (IST)
Topic: Green Gold- A step towards Green economy**.**
Speaker: Smt. Dimpi Bora, IFS, Deputy Mission Director & CEO, State Bamboo Development Agency (SBDA), Assam.

Smt. Dimpi Bora talked about the rich bamboo diversity of NE India & Assam, the functions and role of State Bamboo

Development Agency (SBDA) and the livelihood prospects from Bamboo. The following points were highlighted during the session:

a. Bamboo which is also known as green gold of 21st century in the poor man's timber with more than 50 species in NE India &1400 species in the World. The 2/3rd of India's total bamboo resource is found in NE India.
b. India is home to almost 45 % of world's bamboo forests and annually 4.5 million tons of bamboo is produced from 8.96 m ha. The major bamboo growing regions/states are North East, Madhya Pradesh, Maharashtra, Orissa etc.
c. More than 35 bamboo species are naturally occurring in Assam. Most common are:- *Bambusa tulda (Jati Bah); Bambusa balcooa (Bhaluka Baah); Dendrocalamus hamilitoni (Keko baah); Dendrocalamus giganteus (Mokalam baah); Bambusa vulgaris (Bijuli baah);Malocanna bacciferra (Muli baah).* However, few species are distributed only in Barak valley like: *Bamboosa cacharensis, Dinochlora compactiflora*, *D.india* and in Dibrugarh district like- *Bamboosa masrtersei* etc.
d. Assam has a huge potentials and importance in the bamboo sectors 26% of NER's total bamboo resource is found here and it has connectivity to rest of India and shares boundary with other NE states.
e. Traditionally bamboos are used in fencing, construction purposes, handicraft & furniture making, edible shoots and in agarbatti sector. The modern uses are in pulp & paper, fabrics, panels & boards, construction material, bamboo jewellery, biomass production etc.
f. The prospects of Bamboo in Assam are high due to availability of suitable raw material, availability of skill and technology, scope of mechanization and availability of market.
g. The role of State Bamboo Development Agency (SBDA) is to implement National Bamboo Mission (NBM) in Assam which is a central sector scheme and is funded in the ratio of 90:10 by Government of India and Government of Assam respectively. In Assam, NBM was started since 2018-2019 onwards.
h. The SBDA is doing bamboo plantation through Farmers Producers Organisation (FPO)/Farmers Producers Company (FPCs) here in Assam; providing training to bamboo artisans, organizing district level workshops for capacity building.
i. Assam also came up with Assam Bamboo & Cane Policy, 2019
j. Assam has huge potential in the bamboo sector and can generate employment by empowering women in bamboo jewellery making and shoot processing. Assam has two Bamboo Technology Park located in- Chaygaon & Dima Hasao.

At the end of her presentation, Smt. Bora discussed about challenges in the bamboo sectors such as export of processed bamboo items, lack of proper harvesting plan and sustainable harvesting in Forest.

<u>Session 5</u>: Date: 21st May, 2021; Time: 3.00 PM (IST)
Topic: Climate Change in NE India: Importance of scientific understanding of the global and local context
Speaker: Dr. Partha Jyoti Das, Division Head, Water, Climate & Hazard Division, Aaranyak, Guwahati.

Dr. Partha Jyoti Das in his presentation highlighted some key points like global warming and climate change, the global indicators and local indicators of India and NE in terms of climate change, observed and probable impact of climate change in NE India, importance of understanding the science behind climate change, anecdotal vs scientific evidence of climate change, traditional knowledge vs scientific evidence of climate change, approach to interpret climate change scientifically, and how to deconstruct climate science and relate it to socio-economy and other aspects logically.

The following are few points highlighted during the session:

a. The intergovernmental panel on climate change (IPCC) defined climate change as any change in climate over time whether due to natural variability or as a result of human activity.
b. Warming or increase in temperature on earth's surface during the industrial era because of increasing concentration of green house gases in the earth's atmosphere, about by 1.02^{o}C (over the normal earth surface temperature of about 14.5^{o}C).
c. Heat waves an emerging hazard and cases of death have been recorded in the year 2006, 2008 and 2015 due to unprecedented high temperatures throughout Assam. The maximum temperature recorded on June 14 was 39^{0}C, the highest ever in the state against a long-term normal maximum temperature of around 32^{o}C during the month of June. The highest temperature recorded in the state before June 14 was 38.4^{o}C in 1979. The Guwahati city recorded a maximum temperature of 39.02^{o}C in August, 2019, which was the highest ever recorded temperature of the decade in the month of August. On 5th August, 2020 Guwahati recorded one of the hottest days in the recent history as temperature crossed 38.6^{o}C, 6.4^{O}C above normal temperature.
d. Climate Change Impact is a cascading and multiplying and self-reinforcing process where all aspects of our lives, livelihoods, environment and development are affected leading finally to a global crisis with various regional, national and local consequences.
e. In context to the impact of Climate Change on community of Assam, floods have become erratic, more devastating and more frequent in last two decades. More flash floods now accompanied with debris in tributaries of the Brahmaputra.
f. Assam had been facing moderate and intense drought like situations in 2005 and 2006 respectively. In 2006, 15 districts of Assam had below normal (nearly 40%) rainfall in the region. More than 75% of the 26 million people associated with livelihoods related to agriculture were affected. The state suffered a loss of more than 100 crores due to crop

failure and other peripheral affects. Other NES of the region also received rainfall 30-40% below their normal rainfall except Mizoram.

g. The eight north eastern states, the 2.45 of geographical area of India with 3.86% of national population falls in the most lightning zone. Research reveals that it originates from Chotanagpur Plateau- the confluence of Odisha, West Bengal and Jharkhand; extend through Bangladesh to Patkai plateau of Meghalaya affecting other north eastern states. Lightning strikes in pre-monsoon season maximum over the west of NE India. In 2014 the highest number of thunderstorms recorded in each month of the storm period (March 15 to June 15) in Assam, followed by Arunachal Pradesh, Meghalaya and Tripura.
h. Climate change has a drastic effect on Tea production in NE India. In 2011, early onset of winter resulted in loss of 15 million KG of tea. Upper Assam tea estates in the south bank of the Brahmaputra experienced severe drought conditions. Net estimated loss of tea production is 60% of normal (about 26 million Kgs). In 2012, rainfall deficit for West Bengal at around 31% to 42% during the period January-March compared to the same period in 2011. In the year 2014, abnormally below normal pre-monsoon rainfall during Feb-April (less 30% of normal) badly affected tea production in Upper Assam.
i. As an impact of climate change, temperature soured to about 40^{o}C with humidity reducing to 20-50% against a normal of 50-90%. Crop loss in 2014 in the tea sector- 60 million Kgs of tea (10% of normal production). Tea production in July, 2014 in Assam was down by 3.22% compared to the same period in 2013. Tea yields in the NE India are expected to decline by up to 40% by 2050 (Tea Board of India). After 35 years, the suitability of these regions would drastically reduce across all the tea growing regions and shifting of tea would be observed in comparatively higher altitude areas of Karbi Anglong, Dima Hasao and Tinsukia districts.
j. The National Assessment of Climate Vulnerability for Adaptation Planning in India using a common Framework, 2021, DST, GoI states that Jharkhand, Mizoram, Orissa, Chattisgarh, Assam, Arunachal Pradesh and West Bengal will be more vulnerable to Climate Change impact. The states of Assam, Bihar and Jharkhand have more than 60% districts in the category of high vulnerable districts.

At the end of his presentation, Dr. Das emphasize on this year theme of IDB celebration and said that “Let nature be part of the solution” and tried to convince the participants that climate change, biodiversity, ecosystem, ecosystem based adaptation, nature based solution and traditional knowledge are inter-related with each other and as a conservationist we need to focus on all these factors and parameters.

<u>Session 6</u>: Date: 22nd May, 2021; Time: 11.00 AM (IST).
Topic: We are part of the Solution #For Nature
Speaker: Shri K.S.P.V. Pavan Kumar, IFS, Addl. PCCF (Biodiversity & Climate Change) & Member Secretary-ASBB.

The Member Secretary of Assam State Biodiversity Board during his talk on this year IDB theme "We are part of the Solution #For Nature" explained in details about biodiversity, biodiversity hotspot of the World and India, origin & extinction of species, dependence of human on biodiversity & impacts of human on biodiversity, Convention of Biological Diversity (CBD), Biological Diversity Act 2002, Biodiversity Management Committees (BMCs), Peoples Biodiversity Register (PBR), Access and Benefit Sharing Mechanism etc.

Some of the important key points highlighted during the session are given below:

a. Biodiversity is the function of the number of ecological niche (slots / addresses) available in an ecosystem, Eg:- A tropical rainforest may have many more species, than an arid desert. When an ecosystem (or at a higher level, a bio-geographic region) is rich in biodiversity, it is commonly referred to as 'Biodiversity Hotspot'. Assam has two such 'hotspots'- the Himalayas and the Indo-Burma hotspot.
b. There are four biodiversity hotspot in India- i. The Himalayas; ii. The Indo-Burma Region; iii. The Western Ghats and iv. Andaman & Nicobar Islands.
c. Biodiversity does not mean only the wildlife. It includes diversity in agricultural crops, horticultural crops, farm animals, microorganisms etc. Biodiversity is a provider of all goods and services needed for our survival.
d. Humans impact the biodiversity in many unsustainable ways such as habitat destruction, overexploitation, extinction, introducing exotic species etc. Changes like these have triggered climate change, soil erosion, poor air quality and undrinkable water to name a few. Emergence of deadly diseases and viruses like covid-19 are other problems the present world had to deal with.
e. Living organisms have been round for 3.5 billion years. Right now, about 8.7 million species are existing on planet Earth. Basic Extinction Rate: "One species per million species per year" and accelerated Extinction Rate: "Hundreds to thousands of species per million species per year". IUCN & WWF have warned that right now the Earth is witnessing the 6th Mass Extinction. 'Mass Extinction' means loss of three quarters of the existing species within a short time. In recent times, Dodo, Tasmanian Tiger Wolf, Passenger Pigeon, Balinese Tiger etc., have all become extinct in recent times. Lakhs of crop varieties have become extinct so have several species of flora. Current extinction rates are about 1,000 times higher than before humans came along, and future rates are likely to about **10,000 times** higher, according to estimates. It also found 42% of land-based animal and plant species in Europe and Central Asia had declined in the last decade. Loss of habitat is also a major threat to biodiversity.

f. Convention on Biological Diversity culminated on 22 May 1992 with the Nairobi Conference for the Adoption of the Agreed Text of the Convention on Biological Diversity. The Convention was opened for signature on 5 June 1992 at the United Nations Conference on Environment and Development (the Rio "Earth Summit"). It remained open for signature until 4 June 1993, by which time it had received 168 signatures. The Convention came into force on 29 December 1993, which was 90 days after the 30th ratification. The first session of the Conference of the Parties was scheduled for 28 November – 9 December 1994 in the Bahamas.

g. The Convention establishes three main goals: i. the conservation of biological diversity; ii. the sustainable use of its components, and iii. the fair and equitable sharing of the benefits from the use of genetic resources.

h. In December 1993, the United Nations has proclaimed May 22nd as 'The International Day for Biological Diversity' (IDB) to increase the understanding and awareness of biodiversity related issues. Each Year, since 2002, this event has been celebrated across the globe on a specified theme. The 2021 theme "We are part of the Solution. # For Nature" highlights that from nature-based solutions to climate, health issues, food and water security, and sustainable livelihoods, biodiversity is the foundation upon which we can build back better. It emphasizes hope, solidarity and the importance of working together at all levels to build a future, of life, in harmony with nature. The logo design itself represents interconnectedness of all life on earth.

i. The Biological Diversity Act, 2002 says people to organize into Biodiversity Management Committees (BMCs) and become the owners of local biological resources. They shall record all biological resources and associated Traditional Knowledge into Registers (PBRs). They shall regulate access to and use of these recorded biological resources, and shall get fair and equitable share in benefits if resources are commercially utilized. In Assam we have BMCs at all local bodies i.e. Anchalik Panchayat, Gaon Panchayat, Zilla Parishad, Urban Local Bodies and BMCs at Range level in Autonomous districts.

j. The Access and Benefit Sharing (ABS) mechanism is a legal regulatory framework under the Biological Diversity Act-2002 to regulate activities of commercial utilization, research, bio-survey and bio-utilization of biological resources occurring in or obtained from India. It is a mechanism which secures fair and equitable share in the benefits arising out of the access and utilization of biological resources for commercial purposes. The benefits thus secured are channelled to the benefit claimers and for the conservation of biological diversity.

Coming to the theme of the IDB 2021, Member Secretary-ASBB emphasized on the following points:

- that to be a part of the solution everyone has to do their bit- the Government organizations, the NGOs, Eco Clubs, BMCs, EDCs, JFMCs, student communities, common citizens need to understand their roles and responsibilities and contribute in small ways to minimise the burden on Nature.

- that by adopting Nature based Solutions (NBS) which refers to the sustainable management and use of nature, we can tackle socio-environmental challenges such as climate change, water security, water pollution, food security, human health, biodiversity loss and disaster risk management.

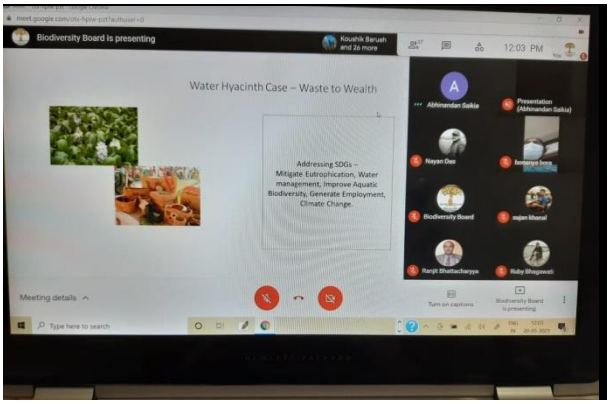
- The NBS solutions are "inspired and supported by nature, which are cost-effective, simultaneously provide environmental, social and economic benefits and help build resilience. Such solutions bring more, and more diverse, nature and natural features and processes into cities, landscapes and seascapes, through locally adapted, resource-efficient and systemic interventions

- The Nature-based Solutions Initiative meanwhile defines them as "actions that work with and enhance nature so as to help people adapt to change and disasters". With NBS, healthy, resilient and diverse ecosystems (whether natural, managed or newly created) can provide solutions for the benefit of societies and overall biodiversity.

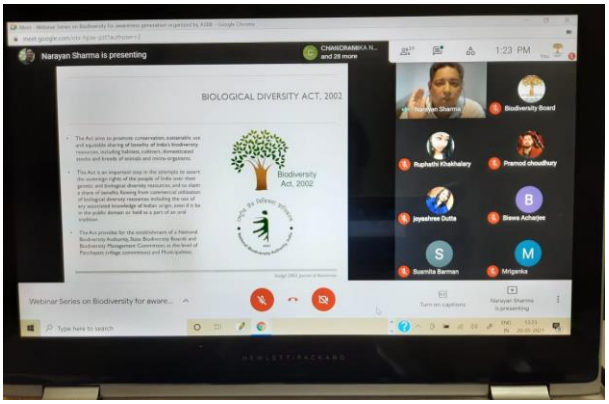
At the end of his presentation, the Member Secretary-ASBB talked about the importance of North East India in terms of biodiversity richness, about living sustainably and the growth dilemma and finally reiterated that we have to move towards a sustainable life, even if there is no master plan on how to achieve the transformation of our present society - with its perpetual expansion - towards sustainable development. He ended his presentation with the remarks that earth's supplies are limited and we must use our resources wisely.

The webinar series was successfully conducted with 55-70 participants attending each session and having a good and lively interaction with all the speakers. Around 340 number participants registered for the three days webinar series.

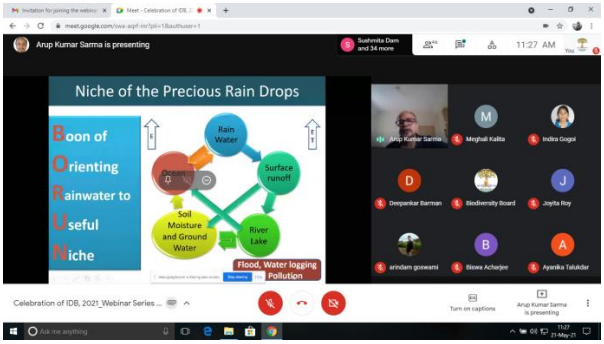
Few photos of the Webinar Sessions:



First session on 20th May, 2021



Second session on 20th May, 2021



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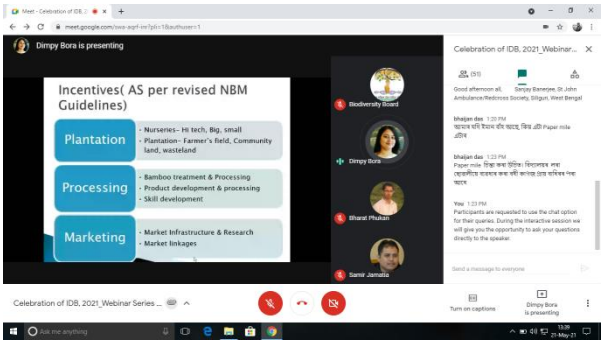

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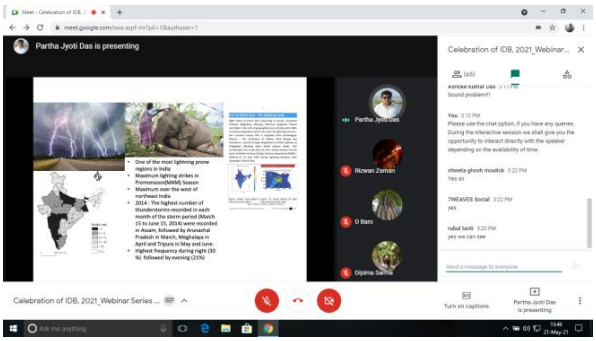
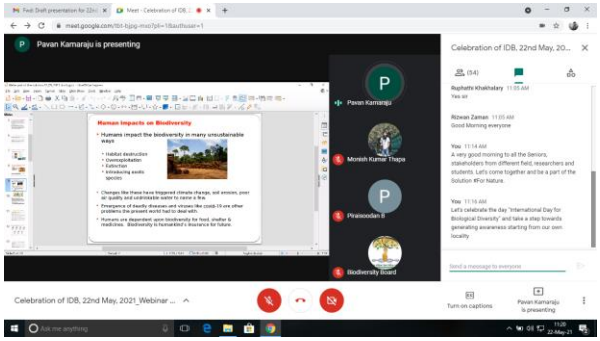


Third session on 21st May, 2021



Session on 22nd May, 2021

About the Speakers:

1. **Dr. Abhinandan Saikia:** Dr. Saikia is an Assistant Professor at the Tata Institute of Social Sciences (TISS), Guwahati campus. He is associated with the Centre for Ecology, Environment and Sustainable Development in the institute. Prior to this, he has worked in organizations like National Institute of Science, Technology and Development Studies (NISTADS - CSIR), World Wide Fund for Nature (WWF) - India, New Delhi and the United Nations Development Organizations (UNDP), New Delhi. His thematic areas of interest are – Agroforestry, Traditional Knowledge System, Common Property Resources, Innovation and theories of Institutional change. Academically, Dr. Saikia is from an interdisciplinary background. He did his B.Sc in Botany from Cotton College (under Gauhati University), M.Sc in Environment Management from Forest Research Institute, Dehradun and Ph.D from the Centre for Studies in Science Policy (CSSP), under the School of Social Sciences, Jawaharlal Nehru University (JNU), New Delhi.

2. **Dr. Narayan Sharma:** Dr Sharma completed his MSc in Zoology from Gauhati University, PhD from National Institute of Advanced Studies, Bengaluru/Manipal University, Manipal and Postdoc from Nature Conservation Foundation, Mysuru. His doctoral thesis examines the impact of habitat fragmentation on the primate assemblages

in Upper Brahmaputra Valley, Assam, north-eastern India. His post doc was on the conservation planning for Asian elephants in Karnataka. He teaches ecology, wildlife and conservation biology at Department of Environmental Biology and Wildlife Sciences, Cotton University since 2015 and is the founder head of the department. His research interests lie in the field of community ecology, conservation biology, primatology, human ecology, ecological history and history and development of ecological sciences. He is the recipient of the 2016 Vice-Chancellor's Award for Exemplary Service to the University awarded by the Cotton College State University, Guwahati. Dr Sharma is also interested in popularising ecological science and has written several popular articles on natural history and conservation biology. Dr. Sharma is also one of the members of the State Level PBR quality evaluation and monitoring committee.

3. **Dr. Arup Kumar Sarma:** Professor and former Head of Civil Engineering Department, IIT Guwahati, and Visiting Professor of Asian Institute of Technology, Thailand, was honored with the prestigious B.P.Chaliha Chair Professor Position (2009-1018) by Ministry of Water Resources, Govt. of India. Working with 27 Ph.D. research scholars, addressing various problems in the field of Water Resources, Prof. Sarma has published more than 150 technical papers. The NPTEL (National Program on Technology Enhanced Learning) video course on Hydraulic Engineering developed by Prof. Sarma received wide appreciation and entered into top 5 most visited courses. Till date, he has completed 22 sponsored research project and 65 consultancy projects from India and abroad. Prof. Sarma served as Member of Advisory Committee of NDMA, Member of Indian National Committee for Climate Change (INCCC), Member of National Coordination Committee of National Institute of Hydrology (NIH), and Expert committee member of High Level Committee (HLC) of NITI Aayog constituted for Proper Management of Water Resources of NER among other. Prof Sarma is also a reviewer for several reputed international and national journals. Dr. Sarma, as an Approved Lyricist of All India Radio, has also devoted himself to the promotion of scientific temperament in the society through music and drama.

4. **Smt. Dimpi Bora, IFS:** Smt. Bora is a 2012 batch IFS officer presently serving as Deputy Mission Director & CEO, Assam Bamboo Mission in addition to my present posting as DFO Guwahati Social Forestry Division. I have served in both Wildlife and Social Forestry Wings. I have graduated from Cotton College with Botany Hons. & became the first Lady from Assam to join Indian Forest Service.

5. **Dr. Partha Jyoti Das**: Dr. Das is an environmental scientist with special interest in the area of 'water, climate change and disasters'. He has done research for more than 20 years on inter-disciplinary areas in the interface of natural science, environmental science and social science.
   He has explored, researched, spoken and written regularly on various aspects of Climate-water-disaster nexus, with special reference to the Brahmaputra river basin in India. He

has been advocating for comprehensive review of existing institutions, policies and practices, policy reforms, long-term action plan and strategy for effective water and river management, risk mitigation and climate resilience integrating good science and technology with people's indigenous knowledge and local experience. Dr. Das is a Member of the (i) Steering Committee of the 'Forum for Policy Dialogue on Water Conflicts in India' (ii) 'Expert Committee constituted by the Government of Assam for the rejuvenation of the River Kolong, Assam; (iii) Expert Group on REDD+ of Government of Assam. Dr. Das is a Senior Fellow of the 'Asian Confluence', a regional think tank for socioeconomic development, cultural integrity and ecological security of South and Southeast Asia. He is a consultant a project advisor to the North East Centre for Technology Application and Reach (NECTAR) which is an autonomous body under the Department of Science and Technology, Government of India. He has completed more than 25 research and action research projects and has more than 35 publications comprising research papers in national and international journals, technical reports, monographs, book chapters, edited books and popular articles. Presently he is heading the 'Water, Climate and Hazard Division' of Aaranyak, a premier environmental NGO of Northeast India.

6. **Sri K.S.P.V. Pavan Kumar, IFS, Member Secretary-ASBB:** A Postgraduate in Life Sciences from JNU, New Delhi, joined the Indian Forest Service in 1992. Holds a post graduate diploma in Environmental Law from National Law School of India University, Bengaluru, Karnataka and an Associate of I.G.N.F.A diploma from Indira Gandhi National Forest Academy. Worked in the Regional Office, MoEF&CC, Bengaluru as DCF (Central), and in the Irrigation and Command Area Development Department of Andhra Pradesh as Additional Secretary to the Government. Worked as the Officer-on-Special Duty to the Hon'ble Chief Minister of Assam, and as Managing Director, Assam Medical Services Corporation and as Commissioner, Food Safety and Drug Control, Assam. Also served as the Project Director in the A. D. B. and assisted Assam Urban Infrastructure Investment Programme. Presently posted as Additional Principal Chief Conservator of Forests (Biodiversity & CC), Member Secretary-ASBB, CEO of Assam Climate Change Management Society (ACCMS), Project Director, Assam Project on Forest and Biodiversity Conservation Society, funded by French Government and PI of the Him- Nature Learning Centre, Assam.